AMERICAN

# JOURNAL OF INSANITY,

FOR APRIL, 1874.

## SYPHILITIC AFFECTIONS OF THE NERVOUS SYSTEM.*

This subject is one of such interest that we offer no apology to our readers for giving them, in a condensed form, the following lectures, which embody the latest researches relating to the effects of syphilis on the nervous system.

Syphilis is a disease which, from the time of its recognition or of its introduction into Europe, has largely engaged the attention of each successive generation of physicians, and the literature of the subject is of enormous extent. I can not pretend to give even an outline of the views which have been held as to its effects on the nervous system, but I may briefly indicate the course of opinion. Early writers on syphilis attributed vaguely to this malady almost all forms of disease for which they could not otherwise account, including many affections of the nervous system: vertigo, convulsions, epilepsy, apoplexy, paralysis, tremor, hydrocephalus, hypochondriasis, blindness, deafness, and various others are enumerated. Indeed, mention is made in their works of nearly all the manifestations now recognized, and probably in the fierce epidemic of syphilis in the fifteenth century the protean forms of the disease succeeded each other more rapidly than they are now seen to do, and thus the relation between them was more readily traceable. But, as has been well said, syphilis was made the "scapegoat of pathology," and upon its head were heaped

* *Lettsomian Lectures*, delivered at the Medical Society of London, by W. H. BROADBENT, M. D., F. R. C. P.—*London Lancet*, January 10, 1874, and subsequent numbers.

offenses not its own. When this was discovered, much that was true was thrown aside together with what was false, and for a time it was generally considered that the internal organs of the nervous system were not liable to be affected by syphilis. Hunter appears to have been of this opinion, as also Sir Astley Cooper, and for some time after this surgeon we look in vain for records of syphilitic disease of the brain, lungs, or liver. Little by little, however, within the last thirty years, clinical observation on the one hand, and pathological research on the other, have gradually identified the morbid changes resulting from syphilis in all the abdominal and thoracic viscera, in the brain and spinal cord, and traced in some measure the symptoms to which they give rise.

In considering the diseases of the nervous system connected with syphilis, the first question which arises is, At what period of syphilis are these affections liable to be introduced? Syphilis is considered to exhibit primary, secondary, and tertiary stages; or we speak of primary, secondary, or tertiary manifestations. These designations have relation, not to mere lapse of time, and not always even to order of appearance, but more strictly to order of lesion than to order of succession.

If we admit into our catalogue of nervous affections all the symptoms arising in the course of syphilis which are capable of being referred to the nervous system—the wandering rheumatoid pains felt in the muscular structures in early syphilis, the osteocopic symptoms of later stages, sleeplessness, irritability, change of disposition,—the liability is coëxtensive with the disease. We all recognize the distinction between the disorders of the nervous centers due to the circulation in them of poisoned blood and the diseases of those centers produced perhaps by some blood poisons; as, for instance, between the common delirium of enteric fever occasioned by a heated and impure state of the blood in the disease, and the exceptional meningitis set up by the same state. There is the same distinction in syphilis between the disorders of the nervous function and the morbid conditions of the nervous structures which it can induce. With this limitation, which will greatly economize my time, and permit me to devote more attention to the more important part of my subject, we shall find that nervous affections may arise either in the secondary or in the tertiary stage of the disease, but far more frequently in the latter. The affections of the two periods, moreover, are not identical, and I think the diversity will be found more considerable than has generally been supposed. The difference has been recognized by most

observers, and it is what might have been anticipated from the different clinical characters and different pathological tendencies of syphilis in its various stages. It is even better understood, as it appears to me, by reference to the theory of Mr. Jonathan Hutchinson, which brings syphilis into the class of continued eruptive fevers. According to this theory, the secondary stage of syphilis represents the fever—the tertiary stage so called, the effects produced upon the solids and liquids of the organism by the febrile process. The tertiary stage becomes thus, not a part of the disease itself, but a consequence of it, corresponding to the sequelæ of fever, such as dropsy in scarlatina and scrofulous affections after measles. Whatever view may be taken of tertiary manifestations, whether they are to be considered as the continuation or as the consequence of syphilis, the truth of the analogy between syphilis and continued fever appears to me to be undoubted. They have in common a period of incubation and a febrile stage which runs a more or less definite course. In this febrile stage, which is attended with symmetrical cutaneous manifestations and disseminated lesions in the internal organs, the poison is reproduced in the system, and the individual who is the subject of the disease becomes a source of contagion. Finally, one attack usually confers future immunity from the disease. Now, just as in fevers we may have pneumonia or meningitis not distinguishable by any anatomical characters from pneumonia or meningitis due to other causes, and recognized clinically by the supervention of these conditions upon those of the fever, so, in the secondary stage of syphilis, there may occur spinal or cerebral congestions or inflammations which have no peculiarity to indicate the syphilitic character of the affection, and this has to be ascertained almost entirely from previous history or from existing manifestations of syphilis. In tertiary syphilis, on the other hand, the morbid processes set up are altogether peculiar, as will be described, and the symptoms are often sufficient of themselves to establish the nature of the case in the absence of collateral evidence. As they will engage our attention later, when considering the affections of different parts of the nervous system, I shall not dwell longer upon them now, but proceed to the consideration of another question—whether, namely, there is any particular form of lesion or any particular course of the subsequent constitutional manifestations, which is attended with special liability to affection of the nervous system.

From the cases which have come before me, and from what I

have seen of syphilis affecting other organs, confirmed by inquiries which I have made of surgeons who have extensive opportunities of observing the disease in all its stages, I have formed an opinion that it is chiefly in persons in whom the secondary affections have been transient and insignificant or even absent, or in those in whom the tertiaries arrive early or primarily, that the nervous system is liable to suffer. I am corroborated in this view by the statement of Gross, Lancereaux, Braus, Buzzard, Moxon, and other writers, and it is scarcely possible otherwise to explain the entire absence of syphilitic history in many cases obviously of a syphilitic character.

The symptoms to which any disease of the nervous system gives rise will result primarily from derangement of function of the part affected, but the kind and degree of such disturbance will be greatly influenced by the nature of the morbid process and by its rate of progress. It will make a great difference, for example, whether a tumor at a given situation in the brain or cord has its starting-point on the surface or in the substance, whether it increases rapidly or slowly, whether it grows at the expense of the nervous structure, causing no actual increase of volume, or adds to the contents of the cavities, and displaces and compresses the nervous matter. In considering, therefore, the morbid conditions to which syphilis gives rise, we have to take into account not only the morbid anatomy but the general habit of the disease. There are very large materials from which I might draw the account to be placed before you of morbid changes produced by syphilis in the nervous structures. I shall avail myself almost exclusively of those of Drs. Wilks and Moxon, whose contributions are at once ample, clear and comprehensive; indeed, I know nothing in pathology more admirable than their descriptions of syphilitic disease in the Guy's Hospital Reports. According to Dr. Wilks, in syphilis there is a disposition to the effusion of a low form of lymph or fibro-plastic material in nearly every tissue of the body. When this exudation comes to be examined after death, it has generally had a long existence in the organ in which it is found, and it presents under the microscope fibro-plastic elements, small nuclei, fatty granules, and some amorphous matter. As a rule, the deposits are hard and fibrous, and not soft, as is suggested by the term gumma or gummatous usually applied to them, but they may undergo secondary softening. There is nothing specific in the individual elements, and, indeed, the notion of a specific structural element in any disease is now generally abandoned; but character-

istic peculiarities exist which have been more exactly described by Dr. Moxon. He says:—"If one looks over a series of syphilitic changes, and compares them with any other form of changes, one finds that the syphilitic cases have characters by which they are practically easily distinguished." These characters I would state in Dr. Moxon's words: "1. Generally a small part of the organ is attacked, and the remainder is left quite free. The disease is strictly localized in the spot it affects. 2. Its outer part is composed of fibrous tissue, which can be seen to represent the natural fibrous supporting elements of the part in a state of augmentation, while the functioning elements of the part have dwindled away. It is local sclerosis. 3. Its central part shows the now celebrated caseous or gummatous faint yellowish matter of more and more elastic consistence and less and less friability and curdiness, generally rather sharply distinguished from the fibrous outer part, and sometimes softening down or calcifying. 4. There are signs of more acute inflammation in the immediate neighborhood, showing lymph, &c., or adhesions to the parts around. (3 and 4 may be absent.) Such patches, sharply contrasting with more healthy tissue immediately about them, and (5) distributed more or less widely in a variety of organs, but especially in the testes and liver, are not a general thing that could be passed over as a common accident. Their characters attract attention. A syphilitic gumma in muscle or brain is so unlike anything else that, if seen for the first time by one who knows the rest of the common run of pathological changes, it demands from him some recognition of its peculiarities. In short, it is not common, but specific in the strict sense of the word." There are other details, which I will not go through. What I have said is sufficient to describe the general characters of syphilitic changes as affecting the nervous system, the habits of locality, and rates of progress of the disease. "Syphilis attacks"—I am again quoting Dr. Moxon—"the surface of the brain and its membranes; it attacks them in limited spots, and it spreads slowly. The morbid changes are, on the one hand, adhesions of the membranes to each other and to the surface of the brain by means of an adventitious material of firm consistence and yellow color, which may be called lymph, but is harder, tougher, and more opaque. This exudation may be found at any part of the surface; it invades and destroys the gray matter, interferes with the supply of blood, and when it occupies the membranes at the base of the brain, surrounds and involves the nerves in the intracranial part of their course." On the other

hand the syphilitic deposits may take the form of a distinct tumor of fleshy aspect, vascular externally, but presenting at the center the well-known gummatous character. Or the deposit may be small and circumscribed, but multiple, firm, and hard as to consistence, and yellow in color Around the foreign bodies may be more or less inflammation or softening in the spinal cord. While the general characters are similar, there are differences of detail, which will be described later. But all these deposits of lymph, whether diffused or circumscribed, are met with in the tertiary stage of syphilis. Dr. Wilks, it is true, considers the disease to be characterized throughout by a tendency to effusion of lymph, and he makes no distinction in this respect between secondary and tertiary syphilis, explaining the fact that the deposits are only found in the tertiary stage by saying that it is only in this stage that sufferers die from syphilis, and that the post-mortem appearances may date from the secondary period. But if people do not die from secondary syphilis, they die during this stage from accident and other disease, and there ought to be abundant evidence of the presence of the deposits described; but, as I have already said, the differences in the clinical history of secondary and tertiary syphilis, and in the treatment required by those two stages of the disease, are such that nothing short of the overwhelming evidence we possess would convince us that there are only two periods of the same affection; and we may well look for differences in morbid anatomy. The differences found are, moreover, such as would be explained by considering secondary syphilis as fever, of which the lesions of tertiary syphilis are the sequelæ. Looking upon inflammation as the result of the disturbance of the relations between the blood and the tissues, in the one we have this relation disturbed by a morbid condition of the blood, in the other by a deteriorated state of the tissue-elements. In secondary syphilis, pathological conditions indeed are chiefly evidence of meningitis, old or recent, or of congestion, and very frequently no appreciable lesions have been discovered; the same conditions, in fact, produced by other blood-poisons in tertiary syphilis — the peculiar localized changes described.

In addition to the morbid changes in the nervous structure proper and in the vascular meninges, the brain or spinal cord may be invaded by gummatous tumors springing from the dura mater or the bones, or may be affected by extensive inflammation from carious bone. Or, again, the blood-supply may be cut off by obstruction of an artery from syphilitic disease of its walls.

The scheme I have laid down for myself in these lectures is to describe successively the effects of syphilitic disease on the nerves, on the spinal cord, and on the different parts of the encephalon. I am not aware that this has as yet been systematically attempted; but though it would have been easier, and perhaps safer, for me to have followed the beaten track, and speak of symptoms or groups of symptoms of affections of sensation, motion, or intelligence, of painful, convulsive, and paralytic affections, of affections of the nervous system without referring them to any definite seat and form of lesion, I have preferred to try to make use of our increasing power of localizing and defining the morbid conditions from the symptoms to which they give rise, and to make the organic changes the basis of my classification.

I come first, then, to the syphilitic affections of the nerves, which will comprise the neuralgias and the local paralyses. Of the pure neuralgias I have little to say; I do not think they are very common; they do not differ materially from the ordinary forms of neuralgia.

We may have local paralysis or syphilitic affections of every cranial or spinal nerve. With the exception of a transient loss of power sometimes seen in the ocular muscles, paralysis of individual nerves is almost invariably a tertiary phenomenon. It may be produced in various ways by a neuroma, by the inclusion of the nerve in a gummatous tumor—a very rare occurrence, of which I have seen a few distinct specimens; but usually the question of causation lies between periostitis about the orifice or exit of the nerve, the cranium, and the spinal canal, and meningeal exudation, involving the nerve during the intracranial or intraspinal part of its course. The latter is by far the most common cause, as will be seen from a consideration of the cases. Any points of the cranial nerves may be paralyzed from the consequences of syphilitic disease; but some much more commonly than others. I shall not here speak of the affections of the special senses—loss of the sense of smell, blindness, or deafness; these would alone form a subject large enough for a course of lectures. To speak only of vision; it may be impaired or lost in consequence of syphilitic inflammation of the choroid coat or retina, or from double optic neuritis consequent upon a syphilitic tumor in any part of the brain, or from pressure upon the optic tract. Deafness, again, which is connected with syphilis, may be due to affections of the auditory mechanism or the auditory nerve. Leaving these out of the question, then, the cranial nerve most frequently

affected is the third. Sometimes the only result is mydriasis, from loss of accommodation or dilatation of the pupil, or ptosis of the eyelid; but more commonly the entire nerve suffers, and, in addition to the ptosis and dilatation of the pupil, we have external strabismus and immobility of the globe of the eye. The twofold fact that the third nerve is the most frequently affected and often the only nerve paralyzed, and again, that portions of the nerve may suffer before the others, is explained by the habit of locality of syphilitic exudation, of which the interpeduncular space at the base of the brain traversed by the third nerve on its way to the cavernous sinus is the favorite seat, and it is conclusive evidence that paralysis is not due to the periostitis at the orifice of exit. The nerve also has been found compressed by a gummatous tumor of the sella turcica of the sphenoid bone, and I shall give an illustration as an example in which both nerves are affected. Paralysis of the sixth, the evidence of which is internal strabismus, is perhaps, next in frequency. Paralysis of the fourth, the remaining motor nerve of the eye, is not common; it is shown by double vision without an obvious squint, the two images being obliquely placed with respect to each other, and receding when the patient looks down, since this brings the superior oblique muscles into action and approximating each other, and finally they are equalized as the eyes are raised, so that vision is single when the patient looks up. Paralysis of the seventh, like oculo-motor paralysis, is more frequently caused by pathological conditions which are not of syphilitic origin. The features which it presents are too familiar to need enumeration, as also those of paralysis of the fifth. Paralysis of the ninth may be seen of course in the tongue, and the sterno-hyoid and thyroid muscles; and of the eighth in difficulty of deglutition.

I will conclude with a few cases of paralysis of individual nerves; first, cranial; then cervico-brachial; and then of the lower extremities. *The first case is a case of paralysis of the left third nerve, slight right hemiplegia, and ultimately paralysis of the right as well as the left third.*

*The next is a case of paralysis of the first and second divisions of the right fifth nerve, the fourth nerve, and the palpebral branch of the third nerve on the same side.*

*A seamstress, aged forty-seven, came as an out-patient to St. Mary's Hospital on April 27th, 1865, suffering from paralysis of the right seventh nerve, with partial implication of the ninth.*

*In January, 1871, a woman aged thirty-nine, came under my*

*care with paralysis of the left portio dura, preceded by pain in the forehead accompanied by pain and tenderness of the mastoid process. This was removed under the influence of iodide of potassium in a little more than a month.*

As to the nerves of the upper extremity, I have seen several cases, a few of which I may detail.

In November, 1864, a woman aged forty-two, who lived an irregular life, though she did not acknowledge syphilis, came under my observation. She began to suffer a month previously from pain in the neck, down the right arm and forefinger, which had continued ever since. She was worse at night. The arm, also, was very weak, and could not be raised. The neck was stiff and could not be bent or turned in any direction without pain. There was tenderness along the left side of the spine, from the third to the seventh vertebra, and tenderness over the brachial plexus, probably from periostitis, or inflammation of the fibrous structures, involving the nerve roots. There was speedy relief and complete cure by iodide of potassium, and one or two blisters. I saw her subsequently with a node on the femur.

I may mention an example, a very interesting one, of syphilitic paralysis of the lower limb arising from affections of the nerves after leaving the spinal cord. It is a case of paralysis of the flexor muscles of the thigh and of the muscles generally of the leg and foot, loss of sensation over the front of the thigh and along the inner aspect of the leg.

In my last lecture I considered the various features of syphilis which will bear on the consideration of this disease as it affects the nervous system, and more especially the nature of the morbid changes to which it gives rise, and the habits of locality and rate of progress of the morbid processes. It remains now for me to apply the general conclusions there given, and to trace the effects of syphilitic lesions in the different nerve centers.

I showed and illustrated by a few cases the results when individual nerves or groups of nerves were involved. I did not attempt to distinguish between syphilitic neuralgia and neuralgia arising from other causes, and, so far as I am aware, no distinction exists, and the syphilitic origin is ascertained only by the syphilitic history.

In paralysis of individual nerves it is already a feature suggestive of a syphilitic source when it is made out that the cause of the paralysis lies within the cranial or spinal cavity and outside the nerve center, since tumors, which are almost the only other cause of such localized effects, rarely arise in the membranes.

Paralysis of the third nerve is so commonly a result of syphilitic disease about the base of the brain that this is the first supposition which arises when a case presents itself, and it requires elimination before other hypotheses are entertained. The same might be said of the other cranial nerves, except the seventh; and when more than one cranial nerve is affected the presumption of syphilis increases. Corroborative evidence, if not at once yielded by history or coëxisting lesions, would be sought in evidence of the constitutional condition produced by syphilis and in nocturnal pains. But I must proceed to the part of my subject which will engage our attention this evening—viz., the Syphilitic Affection of the Spinal Cord.

The range of symptoms producible by disease of the cord is not very wide. The tendency of most is to paraplegia; and to understand this we have only to remember that in some parts the cord is not thicker than the little finger, and that consequently a limited area of inflammation or a small tumor might involve a complete segment, which is all that is required to cut off the parts below from the volitional centers in the brain, and produce this form of paralysis.

Paraplegia is rather common as a result of syphilis (Bazin says that two-thirds of the cases are syphilitic,) and if taken early and treated energetically it is usually curable. It is therefore very desirable that, if possible, distinguishing features of syphilitic paraplegia should be pointed out.

It has been given as one of the characters of syphilitic paralysis generally, and of syphilitic paraplegia, that sensation is usually not impaired, and that reflex action persists; but this, if it were true as a matter of fact, which I shall show is not the case, would not constitute a peculiarity.

It will not occupy much time, and will conduce to clearness, if I enumerate the principal diseases which affect the cord, with their leading characters.

Myelitis—inflammation of the substance of the cord, if general, gives rise to a progressive loss of motor power from below upwards, with loss of sensation, preceded by tingling, the rectum and bladder and their sphincters sharing in the paralysis. There is little pain, at most a dull aching. Reflex action is abolished, and death occurs when the inflammation extends to the respiratory centers. Bedsores come on early.

A local myelitis, involving a segment of the cord, causes paralysis of the parts below, motor and sensory (or motor only for a

time,) with loss of control over the evacuations. Reflex action will persist, and may be exaggerated from concentration on the motor cells of the anterior nerve-roots of impressions which normally would have been partly transmitted upwards to the brain, and the paralyzed limbs often start involuntarily. If there be pain it is usually due, not to the myelitis, but to some extraneous cause —as, for example, disease of the vertebræ.

Spinal meningitis is attended with pain both along the spine and in the limbs, provoked by movements, especially such as involve motion of the spinal column. There are painful startings, or tonic contractions of the limbs or muscles of the trunk, and sometimes severe tetanoid spasms; sensibility is usually intensified. Paraplegia comes on late, and gradually if at all. There is loss of power in the bladder; not usually in the rectum.

Spinal congestion, according to Dr. Radcliffe, gives rise to sudden incomplete paraplegia, varying in degree, without loss of sensation or of control over the evacuations, but attended with aching in the back and limbs; but there may be a rapidly-progressive fatal paraplegia which leaves only traces of congestion.

Other diseases are, sclerosis of the posterior columns and cornua, and of the anterior white columns and cornua, the former giving rise to locomotor ataxy, the latter to wasting palsy.

There may again be softening of the cord, which, if non-inflammatory, is not to be distinguished from local chronic myelitis; or it may be the seat of tumors.

Syphilis may give rise to myelitis or meningitis, or to the small gummata or local scleroses described by Dr. Moxon; but, before speaking of these, the question of the dependence of locomotor ataxy on syphilis may be considered.

It has been stated that locomotor ataxy is a form of disease often set up in the cord by syphilis, but I find no support for this view in recorded cases, or in my own experience; and it is not the habit of syphilitic disease to follow in its advance any functional or structural arrangement in the part affected, or confine itself to a particular vascular area.

So far as I know, there is still less reason to attribute atrophic paralysis to syphilis than locomotor ataxy.

Coming now to myelitis,—the form most frequently seen in syphilis is subacute or chronic inflammation of a segment of the cord; but, in my opinion, acute, general or local myelitis may be caused by syphilis, especially in the secondary stage. This is a point which can not easily be proved. There is nothing peculiar

in acute myelitis to indicate its cause; and the disease being rare, it must be long before a sufficient number of cases can be collected in which it is associated with syphilis, even by observers alive to the possibility; while in the secondary stage a post-mortem diagnosis can not be made so readily as in the tertiary period of the disease.

Of acute local myelitis I give a case in which also the disease of the cord came on in the secondary period.

*Paraplegia in secondary syphilis; acute myelitis of a segment of cord just above the lumbar enlargment; death from ulceration of bladder and extravasation of urine.*

The paraplegia generally produced by syphilis is the result of disease slowly invading a segment of the spinal cord.

The course of symptoms is such as might result either from a limited chronic myelitis, or from softening, or from tumor.

The age at which syphilitic paraplegia occurs—namely, in early adult life or early middle age—excludes degenerative non-inflammatory softening.

Embolic softening, so far as I know, only occurs in connection with a very general distribution of emboli, and in acute fatal chorea or as in ulcerative endocarditis, when the effects produced elsewhere predominate.

The absence of angular spinal curvature and of the symptoms which disease of the bones or cartilages of the vertebral column produces before the cord is affected, excludes the most frequent cause of local myelitis not depending on syphilis, and we are left to decide from the history or from collateral circumstances between syphilis and rheumatism or exposure to wet and cold or injury.

In syphilis the condition present is probably a small gumma around which inflammatory softening is set up, and this explains the slow, halting, and unequal progress of the paralysis.

Conversely, paraplegia, at first slight, remaining long at a given point or advancing very slowly, then suddenly worse, mending a little again, perhaps spontaneously, or at least without specific treatment, but again increasing, and so pursuing its course to absolute loss of sensation and motion, while reflex action persists, should excite a suspicion of syphilitic mischief and should lead to energetic treatment, whether corroborative evidence is forthcoming or not.

While it was still uncertain whether syphilis could give rise to disease of the nervous system, and the purpose of inquiry was to establish a fact in medical science, no caution could be too great

in accepting evidence on the point; but the fact of causation once established, we are justified in going in advance of positive knowledge in our treatment.

CASE.

*Paraplegia, probably from a syphilitic nodule in the middle dorsal region of the spinal cord.*

Spinal meningitis is far less common than myelitis, and I have met with no acute case distinctly traceable to syphilis.

SYPHILITIC AFFECTIONS OF THE MEDULLA OBLONGATA AND PONS.

The intracranial prolongation of the spinal cord forming the medulla oblongata and pons Varolii is complicated in its structure and functions, not only by the separation of the nerve nuclei from each other in accordance with the specialization of their functions, but by the change in the relations of the gray matter and tracts of white fibres with each other, the decussation of the motor tracts, and the connection of the cerebellum with the spinal axis which is here effected. The consequence of lesions here, therefore, are more varied, and the causes which may give rise to them are increased in number; these parts, for example, may be affected by disease in the cerebellum or by aneurism of the basilar-artery. The increased dimensions of the spinal axis, moreover, permit of unilateral limitation of a morbid change; and this is not uncommon, although the two halves are fused together; while unilateral mischief is rarely seen in the cord, which is almost completely divided longitudinally by the fissures. Possibly, however, the vascular membrane which dips into the fissures is more efficient in communicating a morbid change than nervous structure. The general results of disease in the medulla and pons are, some interference with the sensory or motor tract proceeding from the cord to the sensori-motor ganglia, together with disturbances or abolition of the function of one or more of the nerve nuclei. It is seldom that we can come to the conclusion that there is disease here from sensory or motor paralysis of the limbs alone, or from affections of the nerves which have their origin in the intracranial part of the spinal axis alone, although this may be done occasionally when two nerves are simultaneously paralyzed the nuclei of which are conjoined or in close proximity, while the nerves take a different course after their emergence from the center, as in the case of the sixth and seventh. The grouping of symptoms arise from the inclusion in a diseased area of several nerve nuclei may be very varied. Usually the symptoms afford the means of making a very

precise localization of the lesion by the application of anatomical and physiological knowledge. Of course disease here is attended with great danger to life, the slightest interference with the reflex centers of the respiratory or cardiac movements being fatal. Sudden death, therefore, is common. The nature of the morbid change will be arrived at by considerations such as those made use of in determining the probable cause of paraplegia. A slow but irregular progress of the affection will favor the hypothesis of syphilis, but the morbid changes resulting from syphilis do not specially affect the surface of the medulla and pons, according to Dr. Moxon's dictum, but rather the substance. The progressive labio-glosso-laryngeal paralysis, which is the counterpart of locomotor ataxy, is not syphilitic; but it is quite possible for syphilitic change to involve the same parts of the medulla and give rise to analogous or even identical symptoms. The course of the disease will, however, be different.

CASES.

***Paralysis (hemiplegic) of left face; lateral deviation of eyes to right; impairment of articulation and deglutition; loss of sensation in right face; sudden death; syphilitic tumors in pons and medulla.***

***Slight right hemiplegia of gradual access; impaired articulation; peculiar affection of respiration; sudden death.***

***Left hemiplegia with tonic spasm; impaired phonation and articulation (partial paralysis of eighth and ninth nerves.)***

SYPHILITIC AFFECTIONS OF THE CEREBELLUM.

**The symptomatology of disease of the cerebellum is singularly obscure, corresponding, however, in this respect with the state of our knowledge of the physiology of this nervous center.**

**I still adhere to the theory of its action, which makes it the seat of the higher and more complex coördinations of movements. It is not the sole origin of muscular coördination, as was at first inferred from the experiment of Flourens. The spinal cord coördinates in a distinctly purposive manner movements which respond to tactile or other cutaneous impressions, but when movements have to be guided by vision, some special and more complex apparatus is needed to bring muscular actions into relation with visual impressions, which are so far removed in character from tactile impressions (the immediate guides of muscular actions,) and are correlated with them only by inference and experience. This is essentially, though in a superficial and imperfect way, the view held**

by Mr. Herbert Spencer, and repeatedly expounded and illustrated by Dr. Hughlings Jackson—namely, that the cerebellum is to space relations what the cerebrum is to time relations. Dr. Ferrier's interesting experiments, which appear to make of the cerebellum simply a motor center for the movements of the eyes, receive no support from the facts of pathology, and his results will probably find some interpretation more consistent with these. As in the cerebral hemispheres, so in the cerebellum, there may be extensive disease without obvious symptoms, or the symptoms may be such as will indicate only the existence of intracranial mischief, but afford no indication whatever of the seat of the lesion—viz., pain in the head, vomiting, and blindness; pain, however, being more constant as an accompaniment of cerebellar than of cerebral disease. The special symptoms of disease of the cerebellum, when such exist, are a peculiar staggering gait and a vague purposeless character of the movements generally, together with a marked loss of vigor and energy. A want of control and coördination of muscular actions is evident, but it differs from that due to loss of spinal coördination, and it is not increased by closing the eyes. In the latter stages, evidences of pressure upon the medulla, or of general intracranial pressure, may be superadded, due to effusion into the cerebral ventricles. In the cases of disease of the cerebellum which I have watched to a fatal termination, and in which I have made post-mortem examinations, the cause has not been syphilitic, and in the case I am about to relate, which I considered to be one of syphilitic affection of the cerebellum, no examination was made.

***Headache; fits of uncertain character; hemiopia; later slight right hemiplegia; sudden death.***

I have still to bring before you the affections which result from the effects of syphilitic disease upon the brain, its membranes, and blood-vessels.

I must here, again, briefly enumerate the morbid changes which syphilis induces in the brain. You will remember that the characteristic is a tendency to the exudation of a particular kind of plastic material, which may be diffused in the membranes at the base of the brain, or over the hemispheres, or may take the form of a distinct tumor, which will frequently have great resemblance, externally, to malignant growths. The "habit of locality," of the tumors, as well as of the diffused exudation, is to effect the surface, although gummata or syphilomata may be found in the substance of the brain; usually, however, in the more vascular parts—the gray matter of the corpora striata or thalami.

In the diffuse form we may have the membranes adherent to each other and to the convolutions by means of the firm plastic material described in my first lecture; and, as a result, the vessels of the pia mater are occluded, the supply of blood to the peripheral gray matter is diminished, and this undergoes atrophic change of some kind; or small indurations may invade the nervous structures from the membranes. Disease of the surface gray matter of the hemisphere may give rise to convulsions or paralysis, or the most varied intellectual or moral disturbances, according to the particular set of convolutions affected, and the nature and rate of progress and stage of the morbid process. This it is—the tendency to affect the membranes, and the varying intensity of the inflammation—which makes syphilitic affections of the brain so multiform.

The order in which I propose to consider the different cerebral affections resulting from syphilis, is as follows: Syphilitic Epilepsy, with cases; the graver results of Syphilitic Disease of the Membranes, first at the base, then over the hemispheres; Syphilomata or tumors; Cerebral Diseases in Infantile Syphilis; Syphilitic Thrombosis of Cerebral Arteries.

### SYPHILITIC EPILEPSY.

As disease of the surface of the hemispheres commonly gives rise to convulsions, it is not surprising that convulsive seizures are among the most common symptoms in syphilitic disease of the brain. Attacks of convulsions may usher in a train of disorders of nervous functions, or may be one among many concurrent phenomena, or may form the only important symptoms. They may be produced by tumors growing either from the bones or dura mater or in the pia mater, or in the substance of the hemispheres, when these reach the surface; or by diffused exudation in the pia mater, or by thrombosis at the time of its occurrence and during the consecutive changes; or by slighter changes affecting the nutritive vigor of the hemispherical gray matter.

They are generally late manifestations belonging to the tertiary period of syphilis, though I have seen syphilitic epilepsy within a few months of the first evidence of constitutional affection. It is probably one of the slighter meningeal affections which is present in those cases of so-called syphilitic epilepsy in which the convulsive or epileptiform seizures are the prominent symptoms throughout, and not simply the precursors of graver forms of disease. It is probable, again, that syphilitic disease of the arteries not

giving rise to extensive thrombosis, may produce sufficient interference with the cerebral circulation to impair the nutritive vigor to a degree which will permit of the irregular discharge of nerve force, just as we see sometimes in the epilepsy of advanced life.

In epilepsy proper, or idiopathic epilepsy, there is frequently absence of any lesion to which it can be attributed, and it might be that in syphilitic epilepsy no appreciable lesion would in some instances be found. Authorities, again, are still at variance as to the nervous center in which the paroxysms start. I have not had the opportunity of examining, post-mortem, a case in which the epileptiform convulsions had been the only nervous symptoms due to syphilis, or met with a description of such a case; but although experiments seem to show that disorder of the cortex can not be the only cause of convulsions of the kind seen in epilepsy, it is certain that it is a frequent and important cause; and the associated symptoms make it certain that in syphilitic epilepsy the cerebral hemispheres are affected. These associated symptoms, together with the age at which the periodical convulsions come on, and syphilitic history, constitute the peculiarities which serve to distinguish syphilitic epilepsy. Before entering upon this point I will relate a few cases. The first to be given was under observation for several years.

*Epileptiform convulsions; frequent attacks of petit mal, mental enfeeblement, at one time mania, together with syphilitic keloid, and tumors in the tongue.*

*Frontal node; epilepsy; attacks of giddiness and trembling, with mental depression.*

*Syphilitic sore throat; violent epileptiform seizures; pain in the head; giddiness; hesitating speech; weakness in the legs.*

*Nodes and other tertiary manifestations; epilepsy; headache; giddiness; strange feelings.*

*Syphilitic cachexia and ulceration of lips; epilepsy; petit mal; loss of energy and spirits.*

I may now sum up the features of epilepsy symptomatic of syphilitic disease of the brain by which it may be distinguished from ordinary epilepsy.

As to the convulsive attacks themselves. There is nothing distinctive either in their character or frequency, or in the time of their access—i. e., whether nocturnal or diurnal. It is difficult to obtain a reliable description of a convulsive seizure, and the opportunites of watching an attack are very rare; but after careful

questioning of witnesses in cases of idiopathic and syphilitic epilepsy, I have come to the conclusion given, which is, moreover, that generally accepted. If this statement can be qualified in any way, it would be by the greater irregularity of the intervals between the fits.

An important distinction, however, exists in the fact that the intervals between the convulsive paroxysms, due to syphilitic disease of the brain, are not intervals of perfect health and freedom from nervous disorders. On the contrary, if there are not nocturnal headaches or osteocopic pains or sleeplessness, such as are caused by syphilis independently of disease of the brain, and diagnostic of syphilis, there may be frequent attacks of *petit mal*, often many times a day, or of convulsive twitchings of the eyes or of a limb, or merely of a vertigo or of faintness; or there may be a state of extreme and unaccountable nervousness and apprehension.

Again, we are often put on the track of syphilis by the age at which the epileptiform attacks first come on. It is matter of universal experience that true epilepsy is a disease of early life. If the predisposition, hereditary or otherwise, exists, the disease develops itself before the changes attending the full evolution of the sexual organs are completed. Dr. Russell Reynolds gives the following statement of the age at which epilepsy began in 172 cases:—Under ten years of age, 19; between ten and twenty, 106; between twenty and forty-five, 45; over forty-five, 2. But of the 45 cases in which the disease began, between twenty and forty-five years of age, by far the larger part began at or about the age of forty; so that in early adult life there is almost complete immunity from epilepsy. Now it is just at this period that the epileptiform seizures due to syphilis most frequently come on. When, therefore, a young adult begins to have convulsions of epileptiform character, we may at once suspect syphilis, and the suspicion will be strengthened if there are other nervous phenomena, and may be converted into certainty by evidences of past syphilis—nodes, perforations or cicatrices in the throat, white marks on the tongue, and pigmented scars at different parts.

Once let it be ascertained that epileptiform attacks, not accompanied by other evidences of cerebral disease than such as I have enumerated in the case I have given, are due to syphilis, and the prognosis is most favorable. There is always a liability to relapse, but I have known almost complete immunity from all symptoms to be enjoyed for more than ten years.

### SYPHILITIC DISEASE OF THE MENINGES.

The cases in which the membranes are more gravely affected, and the surface gray matter invaded or involved, or deprived of blood, present an inexhaustible variety of symptoms from different combinations and successions of convulsive and paralytic affections and intellectual derangements. Speaking generally, paralysis of cranial nerves and of the limbs, gradual in their mode of access, are characteristic of disease about the base of the brain; convulsions and mental affections, of disease on the convex surface of the hemisphere.

No strict line of demarkation can be drawn between the cases in which there is extensive exudation in the membranes, and those in which the morbid process results in the formation of distinct tumors. In the former, the deposit frequently here and there takes the form of a nodule, which projects into the brain-substance, and a syphiloma is accompanied by or sets up changes in the adjacent part of the meninges.

### CASE.

*Spinal and cerebral pachymeningitis; epileptiform attacks; paralysis of cranial nerves; after a time slight general paralysis with exaltation; ultimately insanity.*—A gentleman, whom I saw with Mr. Walter Coulson, had had tertiary forms of syphilis, and was in 1866 suffering from spinal meningitis, and from what I took to be general syphilitic inflammation of the dura mater. He had intense pain in the head—a feature of which was that it would come on instantaneously when he lay down, in the part of the head which was lowest, and when he turned round would instantaneously shift to the side which rested on the pillow,—his features had a heavy expression, and there was a slight paralysis of the right external rectus muscle, and double vision. He improved greatly under iodide of potassium; but he was imprudent, courted excitement, ate voraciously, and took little exercise. Early in 1867 he complained on several occasions of a sudden powerful stink encountered in the street which nearly overcame him, and he appeared not to have known fully what he was doing afterwards. These were the precursors of epileptiform attacks of great severity, which were usually preceded by optic illusions, generally of a dog, which he called by name, turned to look at, and then fell down. His mind also became confused and weak, and his limbs deficient in vigor, so that his walk was shambling. He was also willful, violent, and unmanageable. In June, 1867, I found him in high spirits, but speaking rather thickly, and the

words running together; the right side of the face was slightly paralyzed. His memory on some points was good. A month later he was more excitable and willful, and the mental derangement was more marked, the left arm still weaker, and the gait more shuffling. For some time his condition was similar in many respects to general paralysis of the insane: he walked feebly; his speech was indistinct; he was in a constant state of exaltation, talkative, extravagant, ordering all sorts of things, which his friends had to countermand, writing letters, and liable to rounds of violent excitement, and to occasional epileptiform attacks. He improved, however, went to Aix la-Chapelle, then to Australia in 1868–69, returning apparently well, but still not the man he had been formerly. He married, however, and now new troubles began. He was sexually impotent, jealous, easily excited to fits of violent anger, in which he would threaten and even strike his wife, or otherwise inflict pain upon her. At other times he would be kind and repentant. He was convicted of an indecent assault upon a woman in a railway carriage and sent to prison, and eventually had to be placed in an asylum. The most energetic treatment was pursued in the different stages. Iodide of potassium was given in doses which at one time reached a drachm, three times a day. Mercury also was given, and blisters applied at times. There was improvement, and he appeared at one time to be all but well; but, as has been seen, the damage to the cerebral gray matter was too great.

I should suppose in this case that the syphilitic tumors growing from the dura mater and projecting into the convolutions, constituted the principal cause of the symptoms, though there were doubtless other lesions.

CASES.

*Slight unilateral convulsion followed by temporary hemiplegia; bodily and mental torpor and debility; slow, hesitating speech.*

*Fits of uncertain character, followed by left hemiplegia, and later by mental enfeeblement and general weakness.*

*Epileptiform attacks; slight hemiplegia; recovery.*

*Slight motor paralysis of left side, with impairment of sensation in entire left half of body and face; deafness; loss of smell and taste; recovery.*

*Syphilitic inflammation of dura mater.*

SYPHILOMATA OR TUMORS.

Among the most interesting examples of syphilitic disease of the brain are those in which the morbid deposit takes the form of

a distinct tumor. The symptoms common to nearly all cerebral tumors, when any symptoms at all are present, are, severe pain, vomiting, and double optic neuritis; the pain being fixed in seat or radiating from one point, but variable in intensity at different times. Cases, however, are on record in which tumors have attained a large size without giving rise to abnormal phenomena of any kind; and although the concurrence for any long time of the three symptoms mentioned would be almost conclusive of the existence of tumor, the absence of one or other would not necessarily be conclusive to the contrary. Superadded to these general symptoms may be hemiplegia, motor or sensory, if the central ganglia are involved, or paralysis of individual nerves, if the tumor is situate at the base of the brain; or convulsions, if the surface gray matter of the hemisphere is affected.

The symptom of greatest importance is unquestionably the double optic neuritis; and, as Dr. Hughlings Jackson in particular has pointed out, it may for some time be the only symptom, or, if not quite alone, may be associated with symptoms so slight as to have no significance independently of it.

While we can not explain satisfactorily the mode of production of optic changes, their clinical associations and significance are better known. They commonly, almost constantly, accompany tumors, in whatever part of the brain they may form, and perhaps more constantly syphilomata than any others; they usually accompany abscess; very frequently meningitis, especially inflammation of the membranes at the base of the brain; rarely hæmorrhage, unless as a consequence of consecutive inflammation; rarely embolism or thrombosis, though in one case of thrombosis I have seen the most marked optic ischæmia. They do not accompany the molecular changes—inappreciable to the naked eye, and, as a rule, even by the microscope—which give rise to epilepsy or chorea. Syphilomata usually give rise both to general symptoms and to such as aid in fixing the locality, and I do not remember to have read of a case in which an unsuspected syphilitic tumor has been found after death. This is no doubt a consequence of the fact that syphilomata affect either the surface of the hemispheres, or, if they form in the substance, it is at vascular parts such as the central ganglia.

I must again trust to my cases to illustrate the effect producible by syphilitic tumors; but I must notice more particularly a form of affection to which Dr. Hughlings Jackson has specially called attention as frequent in connection with syphilis, and in some sort

characteristic of syphilitic cerebral disease. The prominent feature in these cases is unilateral convulsion, unattended for the most part with loss of consciousness. The convulsive movements may vary in degree from a mere twitch or slight stiffening to the most violent agitation, and may be accompanied or preceded by sensations of various kinds. Usually the starting-point is constant in a given case, and very frequently this will be the thumb and index finger. Beginning here, the agitation may in one attack be confined to the upper extremity, and there may be no loss of consciousness; at another time it will invade the entire lateral half of the body, traveling up the arm to the shoulder and face, and down the leg, becoming bilateral where the nerve nuclei of the two sides are associated; or sometimes the arrival of the agitation and accompanying sensation at the head or face may be the signal for general convulsions and loss of consciousness. If the convulsive movements begin in the foot or face a similar course may be followed, and after the unilateral convulsions the limbs which have been affected may be left paralyzed for a time from exhaustion of the nerve force. When the hemispasm, as it has been called, is on the right side, and especially when the starting-point is the face or tongue, temporary loss of speech is very common.

Sooner or later, and very often early, optic neuritis usually comes on. Dr. Jackson has shown that this hemispasm is due to disease in the convolutions of the opposite hemisphere, almost always near the fissure of Sylvius, and has shown that particular convolutions are involved according as the convulsions begin in the hand, foot, or face; thus extending our knowledge of the localization of function in the cortex of the brain, and giving occasion for the experiments of Dr. Ferrier, which have deservedly excited universal attention. Dr. Jackson has usually found the disease in these cases to be a syphilitic tumor, but the symptoms are of course determined by the situation and not by the nature of the growth. The frequency, however, of syphiloma in these cases will, in cases of doubtful character, be a reason for entertaining the hypothesis of syphilis as a provisional diagnosis.

CASE.

*Motor paralysis of right limbs only; loss of sensation in entire right half of body and face; slight mental disturbance; fits.*

SYPHILITIC THROMBOSIS OF CEREBRAL ARTERIES.

Varied and important as are the effects of syphilitic disease in the membranes and substance of the brain, not less so are the re-

sults of syphilitic disease of the cerebral arteries. Here, again, as in every part of the subject, I have to acknowledge my indebtedness to Dr. Hughlings Jackson, who has led the way in this, as in many other investigations, and has repeatedly insisted on the importance of recognizing the effects of syphilitic disease in the arteries.

The arteries of the brain in syphilis are frequently attacked by inflammation, usually beginning in the outer coat. This may lead to thrombosis which cuts off the supply of blood, and produces the results now known to follow this event. The effects are, first, an accumulation and stagnation of blood in the capillaries in the area of distribution of the vessel blocked, and unless collateral circulation can be established there will be subsequent softening. The symptoms will depend upon the part fed by the artery which is obstructed. I am disposed to think they are more varied than those produced by embolism, since a fragment carried from the valves of the heart or from the aorta, appears to find its way into certain vessels (notable the left Sylvian artery) in preference to others, while syphilitic thrombosis may occur anywhere. In identical situations the effects of thrombosis and embolism would of course be identical.

Syphilitic thrombosis must be of very frequent occurrence, judging from my own experience and from the number of cases collected by Zambaco, Gross, and Lancereaux, but set down as examples of inflammatory softening.

CASES.

*Left hemiplegia affecting chiefly face and upper extremity; convulsive attack followed by mania; peculiar loss of intelligent use of hands without loss of power; syphilitic disease of arteries; thrombosis of right middle cerebral; softening of convolutions near end of fissure of Sylvius, &c.*

*Right hemiplegia with tonic contraction of paralyzed limbs, relaxing during sleep; access sudden, and attended with temporary aphasia.*

*Hemiplegia, right; sudden, with loss of consciousness and impairment of sensation.*

*Syphilitic thrombosis.*—Mary W——, aged thirty, single, a domestic servant, was not aware that she was the subject of syphilis. She had had no cutaneous eruption, but five years before she came under observation she had suffered from perforating ulcer of the soft palate, which had left a large aperture. One morning, at

4 o'clock, while in bed, she suddenly lost the use of the left limbs, and twelve months later she was still suffering from marked hemiplegia. A little improvement was obtained by means of iodide of potassium, cod-liver oil, and iron, but the condition was evidently one of permanent damage and almost certainly of syphilitic thrombosis of a cerebral artery.

*Syphilitic thrombosis* (?)—Eliza W——, aged forty-three, married, and had borne sixteen children, of whom ten were alive and well, came under observation on the 26th of April, 1867. She was aware she had suffered from syphilis, and had scars on her forearms from rupia thirteen years before. Two months previously, when apparently in good health, she suddenly fell down insensible while preparing dinner, and so lay for an hour and a half. When she came to herself, she found she had lost the use of both legs and of the right arm. She also saw double, and everything seemed to go to the top of the room. She had recovered power in the limbs, but suffered much pain over the right brow, and there was slight paralysis of the left side of the face. From this and from the peculiarities of the attack, the mischief was apparently at the upper part of the pons. The nature of the lesion must be acknowledged to be uncertain; it might have been hæmorrhage or thrombosis. Small doses of iodide of potassium had not much effect, and she did not remain under treatment sufficiently long for large amounts to be reached.

We can not present in full all the cases reported as exemplifying the various statements, but have given the points in each case in italics. These will suffice to indicate their general character. In conclusion, the author makes the following remarks upon the diagnosis, prognosis, and treatment.

The considerations involved in the diagnosis of syphilitic disease of the nervous system, are too numerous and elaborate to be resumed in the time which remains at my disposal. We have, on the one hand, to guard against the conclusion that whatever happens in a person who has suffered from syphilis is necessarily due to this disease; and, on the other, to avoid being misled by the absence of an acknowledged syphilitic history or of traceable syphilitic antecedents. The period of life at which the nervous affection comes on is a great guide. In old persons, except in

very obvious cases, we should arrive at a diagnosis of syphilis only after exclusion of other and more common causes of disease of the nerve-centers. In young adults, syphilis would suggest itself early, unless there were heart disease or disease of the kidneys. Our chief aid in the diagnosis, in addition to evidences of syphilitic disease in other parts, which must be carefully looked for, will be the antecedent or associated symptoms which we have learnt by experience to connect with syphilis—headache, with nocturnal exacerbations, sleeplessness, and irritability. The gradual and irregular mode of access, except in the case of thrombosis, is, again, suggestive of syphilitic disease; and convulsions are very common.

In the prognosis we have always to bear in mind the liability to relapse. Occasionally we see recoveries which are apparently complete and permanent; frequently, I think, when the symptoms have been only epileptiform attacks, and the associated nervous disturbances enumerated in speaking of syphilitic epilepsy; sometimes when there has been evidence of graver mischief; but in a large proportion of the cases, the patients will enjoy immunity from similar or more serious symptoms only on condition of perseverance in the employment of the remedies. The chief considerations which bear on the prognosis are the duration, nature, and seat of the lesion. As to duration, the longer the mischief has existed, the more likely are its effects to be permanent; for although syphilitic exudations and growths are singularly amenable to the influence of remedies, if they are allowed to remain for any length of time, they destroy the structures in which they are lodged; this is more particularly important in the spinal cord, in which a very limited lesion will involve the entire segment, and cut off the part below from the cerebrum. It is, however, remarkable how much relief is often afforded, even after a prolonged train of disturbances, by removal of the cause, especially when the symptoms point to an affection of the cerebral hemispheres. As to the nature of the lesion, supposing it to have been determined that it is of syphilitic origin, the most important point is to distinguish between the effect of syphilitic disease in the membranes or nerve substance, and of thrombosis from syphilitic inflammation in the arteries. As Dr. Hughlings Jackson has often insisted, the result of the blocking up of an artery will be independent of the nature of the obstruction. If a collateral supply of blood does not find its way to the part, softening is inevitable; and supposing that treatment could affect the original disease, as when a cerebral

artery is included in a gumma, it would probably come too late to obviate the effects. Usually, as has been stated, thrombosis gives rise to sudden attacks without much pain. Syphilitic epilepsy, so called, yields to treatment. We have here, in Dr. Jackson's language, only a discharging lesion, not a destructive one. In paralysis, on the other hand, there is frequently destruction, but recovery may be expected if we can exclude thrombosis and softening, and if the duration has not been too prolonged. The tumors which give rise to unilateral convulsion appear to be particularly liable to be attended with optic neuritis, and may wear out the patient's strength; but tumors at any part can sometimes be brought to a state of quiescence, and the effect of disseminated lesions are more serious than those produced by a single growth.

As to the *seat* of the lesion, I will only further add that growths from the dura mater are apparently less amenable to treatment than affections of the other membranes, or of the nervous substance; probably because they are less vascular, and therefore less easily reached and less freely acted upon by the remedies.

The treatment is simple. The one remedy is iodide of potassium; or, this failing, mercury. I usually begin with doses of six grains, and always combine with it ammonia—the carbonate or aromatic spirit. Having, by one or two days' experience, ascertained that there is no special intolerance of the iodide, it may be rapidly pushed to doses of twelve, eighteen, twenty-four, thirty, or thirty-six grains, three times a day; occasionally, even larger doses are necessary, and I have given a drachm every four hours. That large doses are often absolutely required, and that they succeed when moderate doses fail, I am convinced by abundant experience; and if iodism is induced, which is very rarely the case in tertiary syphilis, it is almost always before large doses are reached. Large doses are better borne when taken after meals. Of course iodide of potassium is more quickly taken up into the blood from an empty stomach; but it is also quickly out of the blood and in the urine, and when a continuous action on the system is needed, which is what we require in dealing with the effects of tertiary syphilis, the indication is best met by giving so diffusible a remedy as the iodide of potassium after food. If the iodide of potassium fails after a full and free trial, a resort to mercury is always desirable, and the more recent the syphilis the earlier. When we are passing from the use of one to the other drug, either a certain interval should be allowed to elapse, or the mercury, if given by the mouth, should be in one of its most soluble and

active forms—the bichloride or biniodide. More than once I have seen sudden and profuse salivation when this precaution has been neglected, no doubt from the mercury being converted into biniodide within the system. Sometimes I have employed mercurial inunction at the same time with internal administration of iodide of potassium; and have frequently given biniodide of mercury with iodide of potassium, either in the same mixture or in the form of pill at night. One word as to the *modus operandi* of iodide of potassium. This was the subject of a beautiful explanation by Dr. Odling in his Gulstonian Lectures before the College of Physicians, hypothetical at that time, but demonstrated by experiment since. The active agent is the iodine, as shown by the fact that other salts of potassium have not the same effect, while other combinations of iodine, such as iodide of ammonium or sodium, have. The iodine is permitted to exercise its influence on the seat of disease in virtue of the comparatively slight affinity by which it is held in union with the base, this being so feeble that in the presence of certain forms of living protoplasm in active change the salt is decomposed and the iodine set free to exercise its solvent action on the organic matter; whether this is direct or indirect through the well-known oxidizing effects of free iodine is not so certain.

# IS HABITUAL DRUNKENNESS A DISEASE?

BY JOHN ORDRONAUX, LL. D.,
State Commissioner in Lunacy.

Whatever diversity of views may be entertained touching the nature of drunkenness, all are agreed in regarding it as a self-inflicted wrong to the person, eventuating in a wrong to society. It is not strange, therefore, to find it condemned by the law-making power of every age as a *malum prohibitum* as well as a *malum in se*, intensifying crime and justifying the withdrawal from its subjects of the right of controlling their property. Under these views acquiesced in by the Common Law of England and the United States, it is a strange inconsistancy in Legislation, for the State of New York to maintain a State Asylum for one hundred inebriates, while conniving through its excise system at the manufacture of thousands of drunkards, and affixing penalties of various kinds to their conduct. But sentiment is always a disturber of the logistics of legislation, and the moment men undertake to become wiser than their Creator, and to make the basis of legal and moral obligation simply physical, they lose themselves in mazes of self-contradiction and inextricable confusion.

Nothing is more painful in the history of our criminal jurisprudence, nor a greater hindrance to its equitable administration, than the growing tendency to apologize for every sin according to its magnitude. Minor offenses alone are stigmatized with opprobrium, while great ones are casuistically shifted from the regions of human responsibility to the realm of fore-

ordination, and the blame inferentially laid upon the Creator. Struggling virtue may starve unaided and unprayed for in garrets; honest industry may die of a broken heart, wearily waiting for a lifetime in the antechambers of success; the toiling artizan may lose his daily bread from an unlucky speculation of his rich but still grasping employer, and the poor scholar hawk his unappreciated essays from door to door in search of sustenance and a sphere of employment, but in none of these suffering mortals will public sentiment interest itself sufficiently to make them objects of special attention. Crumbs may indeed be occasionally thrown to them by some wayfaring Samaritan, but the voice of public prayer will not be heard, and the efforts of the public conscience will not be invoked by press or pulpit in their behalf. The reason is obvious. In a sensational age like our own, nothing that is common-place is interesting. But let a man commit an astounding crime, let him blaze with blasphemy against religion, let him murder with all the fiendish accessories of mutilation and arson, let him throw around his atrocious acts the lurid glare of an irrepressible fatalism, and he becomes at once interesting to a certain order of sentimental minds. In their estimation he is an instrument, divested of his self-hood, and simply performing the bidding of another. What other? Let us see.

Of late a certain order of minds, exploring the more recondite fields of science, have plumed themselves upon the discovery that all moral liberty in relation to human conduct was absurd and illogical. They assert that inflexible laws not only govern matter in its lower chemical affiliations, but even compel the mind to act in settled and irrefragable lines of conduct. They quote Quetelet, to show that a certain number of suicides occur with definite regularity in any given

year, and in any given locality; that a similar number of misdirected letters are annually put into the post-office, thus testifying to a similar numerical recurrence of obliviousness on the part of their writers; and that finally, taking the whole world through, whether in the department of mind or of matter, necessity, and not moral freedom, is the law both of genesis and of action.

This order of things, this new pangenesis, is both convenient, as well as delectable. It virtually purges man from all sinfulness, and puts the blame upon the Creator for having made him; whereas, in fact, God did not make him as he is, but as he should be, did he but exercise his powers in recovering himself from the downward tendencies that he has both inherited and is in turn transmitting. This is the pivot of the argument, for if God is to be made responsible for the misdeeds of men, because their parent, then Adam, in begetting Cain, was more blameworthy for the death of Abel than was the murderer himself, although God in branding Cain, and not Adam, does not appear to have agreed with these views of our advanced philosophy.

The great center round which now revolves the dogma of human helplessness, fatalism, and irresponsibility, is that of disease. Every vice, every crime is disease, nothing short. And if the crime be so great that human endurance is provoked into an attempt to punish it, the criminal is at once surrounded by an army of sentimental protectors, whose prayers are not so much for his reform, as for scientific light whereby they may explain and extenuate his offense to the world. When insanity can not be invoked, it is something else, but always disease, or that can't-help-it justification which is supposed to admit of no answer.

One of the most striking illustrations of this sentimental humanitarianism, which "like vaulting ambition o'erleaps itself," and thus contradicts those very principles of human liberty which it should, in consistency, sustain, is the present attempt to extenuate habitual drunkenness as a special disease, removing its subjects from the sphere of moral accountability. This is the postulate to the argument which thus framed, converts a vice into a disease, and renders its author and its victim, (both combined in the same person,) irresponsible for his own suffering. Precisely who is to blame for this condiction, is not told us. Some say ancestry, some say alcohol, some say nature, but all come back to disease as the *primum mobile*. But what do these coëfficients mean when taken separately?

FIRST AS TO ANCESTRY.

Every human being has a dual nature, spirit and body. Which part does he inherit from his parents, and which from God? From his parents he receives his physical type, with certain tendencies to repeat whatever they have practiced to excess. And arises a marvelous vindication of God's attributes in that, since there can be no excess in virtue, so parents, however morally good, beget only negatively good offspring, while sin being a violation of virtue, and every step in it but an excess of declination, the morally unhealthy, often beget offspring lower than themselves in either physical or mental attributes, and sometimes in both, as is seen in the descendants of drunkards and habitual malefactors. In fact, there is evidence all about us of a law of moral gravitation through which a soul not ascending Godwards, is as surely descending morally, for it is here that not to advance is to decline, as Milton has so well expressed it:—

> "That in our proper motion we ascend;
> Up to our native seat: descent and fall
> To us is adverse."

But what does a drunkard transmit to his offspring? Not drunkenness surely? Drunkenness is a result, a climax to successive stages of previous preparation, the first of which has been voluntarily produced. We will admit, for argument's sake, that a child inheriting a tendency to drink, may have liquor given it of whose effects it was previously ignorant, and thus be made drunk, or desirous for more, or that any one may through ignorance be once poisoned in this way. But does this prove any moral or even physical obligation upon an individual to drink habitually to excess? Is any man *obliged* to do what his parents may have done before him, simply because he feels like doing it? Is there any physical coërcion about it, when the individual is left to himself? Who tempts him? Himself. Who goes premeditately in quest of the liquor, coolly awaits its preparation, and drains with lingering caress of lip and tongue the juggling draught? Were a sane man to commit homicide with such a show of method and deliberation, would any one call it aught but murder, the highest crime known to the law? And why need a man be a drunkard simply because his father was one. Is drunkenness in the order of nature? A man inheriting consumption has the order of nature working against, as well as for him, and he may not be able to escape his doom, because the material forces of the universe overpower his weakness, just as the same breath of air which fans the fire into a living blaze, may, if too rudely applied, extinguish the spark that is to kindle it. Men must breathe, must digest, and must sleep, in order to live; but has any chemist yet found alcohol in the atmosphere which a man must breathe

constantly, or die; has he found it in the water which a man must drink, or perish from thirst; has he found it in the sunshine which glorifies nature, and gives genetic force to living germs? Has he found it in any of the vital stimuli, without which no living bodies, whatever their rank in nature, can long exist? No. And, admitting even the strongest possible appetite for drink as an inherited tendency, did any one at any time, or in any place ever know of a man becoming a drunkard by spontaneous evolution, and without first drinking sedulously and voluntarily?

The greater rapidity with which alcohol acts upon one man as contra-distinguished from another, does not alter in the least the moral significance of habitual drunkenness. What we insist upon is that no man is by either physical or moral constitution obliged to become a drunkard, and the plea of a drunken ancestor raised by way of demurrer to our right to adjudge him a criminal, is about as weak as would be that of a murderer who should ask an acquittal, on the ground that his father had been a wholesale murderer before him, and he had inherited a tendency to imitate him. Any man may so love the taste, or the effects of liquor, as to prefer to drink rather than to combat the initial impulse towards it, and the same may be said of every other animal instinct. In doing this he only exercises the prerogative of a free moral agent, and because he chooses to do a particular form of wrong, no more proves him to be laboring under disease, than because he chooses to do some other and equally reprehensible act. He has his choice and he makes it, and in order to show that he is not a free moral agent, and to that extent therefore is coërced to drink, one must have evidence that habitual drunkenness, or the love of drink is a natural disease, and not a vice.

THE THEORY OF DISEASE.

Pathologists will hardly agree that a mere craving for alcohol is, in itself, a disease. All organic activity ultimately rests upon the application of certain stimuli to living parts, and organs habituated to stimuli of a particular grade, whether natural or artificial, will, in time, fail to respond to those of a lower degree. Nor are the organs always discriminating in their demands. A pebble in the mouth will provoke the flow of as much saliva as the smell of a sumptuous repast. And in proportion as taste becomes blunted, will the palate tolerate inferior substitutes among stimuli. Hence the demand for fresh supplies of alcohol by the drunkard, not because his system naturally craves it, but because he can not obtain the response and gratification of exaggerated sensation, or the bliss of benumbing narcotism from any other substance in so pleasant a way. Yet if he can not get it, he will put up with something inferior; and if he can get no stimulants at all, he will instead of losing his health, as is the invariable rule with those who are deprived of vital stimuli, enjoy better health. So here is a disease which, the worse it rages in a man, the more surely he will get well of it, if he pays no attention to its symptoms.

Now, if habitual drunkenness be a disease it must be amenable to some, at least, of the laws governing disease. No one at the outset pretends that it exists in any animal but man, and no one pretends that it exists where alcohol is unknown, or unconsumed in some form. Hence it fails to show a basis either in the anatomy or physiology of animal life, what then does it rest upon? It is not due to an atmospheric cause—to germs of infection carried *in fomites*—it is not capable of being produced by cold, starvation, filth, overcrowding and bad air, lewdness, or any *physical* cause whatsoever sav-

ing alone alcohol. Strange disease, forsooth, that has no cause in nature, neither in sun, air, earth, ocean, or waters under the earth. Not even an assumed baleful agency distilled by malignant stars can furnish any physical reason for its existence. Yet if it belongs to the sphere of vitality as acting upon matter, it should move in obedience to some of its laws. Does it? One of the chief and omnipresent results of vitality, whether in health or in disease is, that it expresses conditions above the control of the human will. Its external manifestations may indeed be tampered with, interrupted, and temporarily suspended, but its action is nevertheless continuous, self-consistent, and self-sustaining. Hence no man can will himself into or out of a disease, until vitality has first prepared the proper conditions for its production or elimination. In families inheriting phthisis or insanity, or cancer, *all* the offsprings do not necessarily succumb to the same disease as their parents. Why not, if this physical fate be so inexorable?

Yet we are here presented with an alleged disease called confirmed drunkenness, and described as consuming a man's vitals, and converting him into a mass of organic degeneration; a disease compared with which cancer or malignant erysipelas are merely benign processes of elimination, and which stranger than all, that same confirmed drunkard can, and did produce at will —which he can extend or shorten in duration—which he can accentuate in degree from simple hilarity to swinish stupidity, or unconsciousness, and lastly, and with a superhuman power approaching that of the Deity, can absolutely prevent from *ever* attacking him, if he pleases. Was there ever such another disease known, or over which man was permitted to be omnipotent both to create, and uncreate?

Surely, if in the presence of these allegations of disease we should venture to ask for proofs to sustain them, we can not justly be charged with a design to chop logic, or to split hairs. Diseases have symptoms, else how do we know of their existence? Hence we ask, what are the symptoms, the leading symptoms, of this mysterious malady of the human body which may be produced, regulated, dismissed, or absolutely prevented, at the *will* of its victims? Where is its seat? No one seems to know. Passing strange indeed is this bodily disease that has no local habitation or home, but leads a vagrant life about this tabernacle of flesh. One gentleman indeed located it in the brain, meaning thereby the entire contents of the cranial cavity. But this is rather an indefinite territory and with many mansions in it for excluding the ganglia of special sense, there are seven independent forms of brain substance within the skull, in any one of which this alleged disease may reside. Will the advocates of this theory please to make a choice? We are told by them that the one point of specific differentiation between it and other human distempers is the thirst for alcoholic beverages. This is the pivot of the whole problem, the alpha and omega of this physical riddle. There is no disease recognizable until the appetite for strong drink is formed, and there is none left after the appetite is subdued. The disease, therefore, is a fleeting condition not incorporated in the system, but superimposed by the successive installments of alcohol consumed, and passing from a state of nonentity to one of actuality, at the will of the victim. Doubtless every drunkard suffers from the consequences of excessive organic stimulation, and is to that extent diseased; but the diseases developed in him are objective and visible, hence may be localized and distinguished, and what is particularly

noteworthy, none of them are under the control of his will, except the alleged originator of them all, the appetite for drink.

Again, none of these diseases, or more properly anatomical changes in the structure of organs are the exclusive property of drunkards. Thickening or thinning of the walls of the stomach, chronic diseases of the liver, or brain, or kidney are found in those who have never been drunkards, nor in turn, does the presence of any one or more of these diseases in a person tend necessarily to produce a craving for alcohol, and to precipitate him into habits of drunkenness. In other words those diseases do not inevitably destroy man's moral liberty, and although more common in the drunkard than in others, they do not *per se* produce the evil habit in him because the habit ante-dates the disease, and if so, can not be its result.

Again as soon as the individual has enough of what he *prefers*, and of what gratifies him, and loathes it from satiety, the appetite and the disease vanish together, so that in producing the disease by cultivating it, he extinguishes it at the same time by a surfeit, and it never overpowers him again until he re-awaken it by drink. Does this look as if the germs of this metaphysical disease pre-existed in his body, or does it not look the rather as if he planted them there purposely? If they pre-exist, then they should be able to grow and develop themselves independently of any act or will of his own, which is never so. The problem of self-abasement, or self-redemption is entirely within his control, provided he exercises a continuous determination of his will not to partake. The key to the riddle of this alleged disease lies in a man's own will, and without this will-effort, no physician can cure or even relieve him; with this will-effort, no physician is needed to cure him, for the distemper is always within his own control.

One of the most brilliant and distinquished advocates of the disease-theory surrenders the whole case by an admission of an irretrievably damaging character, when he says that, "The question of the successful treatment of inebriety hinges on the simple fact of *re-formation*, re-formation of the mind and will, as well as of the corporeal man generally." True. These are precisely our views, but they are views which entirely exclude the idea of disease, for what organic disease would reasoning with a man, or re-forming his will, rid him of?

It might enable him to break a habit, but not to remake organs compromised by indulgence in it; for structural changes involve disease as their cause, and are not controllable by the will, as habit is. Again, there is no disease of any organ of the human body whose natural termination is in confirmed drunkenness. If any one laboring under any disease whatsoever, and which belongs to any age, sex, or organ, becomes a confirmed drunkard, it is because he has made himself so. Knowing it to be a fact that mankind suffer everywhere from organic diseases, why is it that such diseases are never associated with even symptoms of drunkenness except where men first introduce alcohol in excess into their systems? The reason is obvious. Inebriety is not a disease, but a self-provoked temporary perversion of our natural functions, induced for purposes of sinful gratification.

### THE SCRIPTURE VIEW.

But whatever men may say, on this or that side of any question of ethics or physical law; however, much they may dispute and divide upon this bearing, or that conclusion of the problem, dare any one doubt that the Author of all being and of Law had forethought in

His omniscience, every possible condition of our humanity? If habitual drunkenness be a disease, who first discovered it? If sin be a disease, who first discovered and gave it that name? Was it God, or was it man? Let us be just. God did not create sin—neither did He create disease, since both are perversions of our original state. But, inasmuch as disease is essentially independent of the human will, and the quality of *wrong intention* can not inhere in matter, God does not punish disease, as disease. Only so far as it is associated with sensuality, does he rebuke the self-provoker of it. He knows better than we the condemnation of physical suffering and mortality under which we labor, nor has He ever turned His face, or withheld the soothing influences of His grace from the sick in body or in spirit who sincerely besought His aid. All through the Scriptures are allusions to His sympathy with the physical sufferings of mankind—now in times of plague—now in times of famine, and nowhere has He shut the gates of mercy against natural and unavoidable disease. Surely Omniscience can not err. He knows best the conditions of matter who was himself the author of it, and what does He say, speaking by the mouths of His inspired apostles. Listen to that well-trained, dialectic Paul, who of all men knew best the weight and worth of words, singly or in context, whose legal training made him the equal of the keenest sophist, and whose inspiration armed him with the irresistible spear of an Ithuriel; hear him as he thunders into the ears of the dissolute Corinthians, this divine message: "Be not deceived; neither fornicators, nor idolaters, nor adulterers, nor effeminate, nor abusers of themselves with mankind, nor thieves, nor covetous, nor *drunkards*, nor revilers, nor extortioners shall inherit the kingdom of God." Does that look as though

he considered drunkenness a disease? If physical disease had been included among the divine prohibitions which worked a forfeiture of salvation could he by any possibility have overlooked them, and would he not have said, "neither consumptives, idiots, maniacs, dyspeptics, nor blind, deaf, dumb, or cripples shall inherit the kingdom of God?" Yet Paul was not an extremist. He was not a teetotaler. He had no prejudices against wine as a medical agent, for he advises Timothy to use it. But note the critical lawyer and careful guide, "Keep thyself pure. Drink no longer water, but use a *little* wine, for thy *stomach's* sake, and thine *often infirmities.*" The reason goes with the advice, preceded by the injunction to keep pure. Pure from what? The context furnishes the key to the answer, pure from drunkenness. And why is drunkenness a vice so reprobated by the Diety? Because of all material conditions it is that one which most emphatically obscures, defaces and degrades the only divine elements within us, the mind and soul.

Will men in the face of these Divine teachings still continue to call habitual drunkenness disease? Will they nurse and treat on pillows of down its subjects, and foster their pride, while at the same time paralyzing their self-reliance, by telling them that they are the victims of disease, inherited or otherwise, and so are not morally responsible for the continuance of the malady? Is there anything more demoralizing to a man than to convince him that he has lost his moral liberty, and is the slave of a blind physical necessity? Let him be taught that his redemption is in his own hands, and the noblest victory that which he accomplishes by his *will.* To say that, his will is subjugated, is not true in the passive sense. He alone subjugates it actively, and if he will but avoid *doing* (that is drinking,) his will-

power to abstain will both continue and strengthen with time. It is a mistake to do too much for weak, sinful men, even by way of charity, for charity with all her tenderness, "rejoiceth not in iniquity," and the truest charity is that which teaches men to win their own independence, by convincing them that they are never morally enslaved except by themselves.

## ON THE GERM-THEORY OF DISEASE.

BY THEODORE DEECKE,
Special Pathologist of the New York State Lunatic Asylum.

### I.—THE LIFE QUESTION.

No recent theory has given a greater impetus to scientific investigation than that of evolution. We can not avoid its influence, upon the elucidation of histological processes, of the morphological changes in diseased structures, formation and decomposition, and upon the theories of disease, since cellular-pathology, and the germ-theory, have directed attention more and more to the minute forms and phenomena of life. Everything living is subjected to a continual change of its constituents produced by constantly operating causes. The single cell itself represents life, and where heterogeneous cells are bound in a state of interaction, they may support each other, or the process of life of the one may destroy the life of the other. Assimilation and excretion are the two active preservers of life, and as one or the other predominates the phenomena of growth or of decay will occur. Growth or decay! "Where are the beginnings?" "What are the ultimate laws of life?" And again arises the question:

transformation or origination, *ex ovo aut ex archē?* No question at the present time has been the subject of more experimental research; none has been more earnestly debated, and with more discordant results.

Even the evolutionists are divided in their opinions, some (Bastian, Häckel, *et. al.*,) considering the law of natural selection as not being confined to living matter alone, and regarding life as "one of the natural results of the growing complexity of our primal nebula." Darwin himself concludes his great work "On the Origin of Species," with the following words:

> It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent on each other in so complex a manner, have all been produced by laws acting around us. These laws taken in the largest sense, being growth with reproduction; inheritance which is almost implied by reproduction; variability from the indirect and direct action of conditions of life, and from use and disuse; a ratio of increase so high as to lead to a struggle for life, and as a consequence to natural selection, entailing divergence of character and the extinction of less improved forms. Thus, from the war of Nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator in a few forms or into one; and that while this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.

These are words which need no interpretation. Huxley, although, supposing it were given to him "to look beyond the abyss of geologically-recorded time," he would expect to be "a witness to the evolution of living protoplasm from non-living matter," adopts it "as an article of scientific faith, true through all

space and through all time, that life proceeds from life, and from nothing but life." While Sir William Thompson in his most interesting hypothesis of the origin of the germs of life on our globe, resorts to "the moss-grown fragments from the ruins of another world."

It will not be my endeavor in the following pages, to sum up all that has been done to elucidate the question of the law of life; but to give a somewhat critical review of the value of the experiments, of the observations and of the philosophical considerations brought forward to establish a theory which harmonizes with our conception of natural processes, and our faculty of recognizing the invariable laws of nature.

The following statements will define the leading principles which should guide us.

1. In observing nature we are accustomed to accept all that our senses perceive, as physical facts. Facts are exclusive, although no one can exist without some relation to others; but all our sensual perceptions are limited.

2. Experiments are employed in studying natural processes for the purpose of confirming facts, but in relation to every fact observed, the one established by experiment may at all times appear altered by the conditions under which the experiment is made.

3. A theory can never be regarded as a true conception of nature, which is not the expression of facts observed and confirmed, or which commits us to suppositions not realizable in thought.

The question of the law of life has been entertained by naturalists in every age. The *archigenesis, generatio æquivoca veterum*, according to the former crude observations of nature, has been generally adopted by the older naturalists, even in regard to the production of

higher organized animals, as insects, fishes, reptiles, etc., and still occupies a somewhat important rank among the popular errors of the present time. After the more scientific investigations of Spallanzani and others, after the improvements made in the optical parts of the microscope and its application to science, after the study of the development and the life of the entophytes and entozoa, and of the processes of fermentation and putrefaction, after the discovery of germs of life throughout the atmosphere of our globe, of growing life even in clouds,—as has been established by numerous examinations of hailstones,—which, impregnated with organic substances, wander from the tropic regions to the pole and back, the biogenesis or the "*omne vivum ex ovo*" theory became more and more triumphant. In the last twenty years, however, the diversity of opinions has remarkably increased. The defining power of our microscopes has been more than doubled during that time; the air, the earth, the ocean, even to the enormous depth of 24,000 feet, have been thoroughly examined, and new orders of organic beings of the lowest kinds have been detected. Experiments, brought to the highest point of accuracy, manifest the most careful considerations of all circumstances which might possibly complicate the result; and yet all the results are discordant. It is true the specialists incline more than ever before, to assume the archigenetic theory. "Evolution," it is asserted, "implies continuity and uniformity. It teaches us to look upon events of all kinds as the products of continuously operating causes, it recognizes no sudden breaks or causeless stoppages in the sequence of natural phenomena." (*Bastian.*) Though the existence of a new order of beings, intermediate between animals and plants, of organisms, paradoxical as it sounds, without organs, the Protista of Häckel,

the first representatives of terrestrial life, from which all other forms are developed, and which are claimed to represent the leading scale from unorganized matter to organic life, has been established, still this evidence has not dispersed scientific skepticism, and natural philosophy clings even now to another conception of organized matter and of what is called "life."

All experiments which have been employed to decide the question, whether living matter is produced without the influence of organic life, turn upon the observation of the changes that a liquid, which contains nothing but dissolved chemical compounds adapted to the nourishment of some of the so-called lower forms of life, may undergo. This is heated and boiled in a flask for the purpose of extinguishing all germinal matter, and the flask is closed hermetically while in ebullition. If gaseous mixtures are allowed to enter the liquid, they are likewise heated, or pass through porous media as a freshly burned porcelain plate, or through a filter of cotton impregnated with resinous substances, or through tubes filled with powdered glass moistened with sulphuric acid, etc. And yet in the one case an actively moving bacterium-termo, or a monad, makes its appearance; while in the other no changes, no alteration of the liquid is observable. Referring to my own experiments, first executed some ten years ago, and repeated at intervals several times since, I have never found any other reason for such discordant results, than that in the one case all imminent germs were destroyed and new ones excluded, while in the other case this was not accomplished. The apparatus employed by me in these experiments, consisted of three wide-mouth flasks holding about four ounces of water. Flask 1 and 2, and 2 and 3, were connected by india rubber tubes, three inches in length attached to stoppers of the same

material, (especially made for this purpose.) In flask 2 a thermometer was inserted, and from the stopper of flask 1, another small tube branched off. All tubes could be closed by very strong clamp wires. After the flasks were charged with the liquid, in every case all clamps were opened, and flask 3, containing air was heated until the thermometer in 2 showed about a temperature of 150° Fahr. This was done to deprive the apparatus of some of the air, and thus prevent so high a pressure during the following operations.

Experiment 1. Flask 1 was charged with three ounces of turnip infusion, flask 2 with one and one-half ounces of Pasteur's ammonio-tartrate solution. Clamp 1, at the branch-tube, and clamp 3, between flask 2 and 3, were closed, and flask 1 exposed to heat until one and one-half ounces of its water were distilled over into flask 2, raising the temperature in 2 to about 190° Fahr. After this, clamp 2 was closed, clamp 3 opened, and one and one-half ounces of the contents of 2 distilled into 3, raising the temperature as high as 212°, and immediately afterwards the liquid was redistilled into 2, clamp 3 closed, clamp 2 opened and the same quantity distilled back into 1. All clamps were closed. After two days bacteria were found in flask 1, after four days flask 2 was infected. The experiment was repeated with the same result.

Experiment 2. Clamp 1 and 2 closed. One ounce of the liquid in flask 2 was distilled over into 3 and back. The clamps were closed. After four days living bacteria were found in flask 2. The distillation was then twice repeated: After fourteen days no signs of bacteria could be discovered.

Experiment 3. Flask 1 charged with three ounces of Pasteur's solution, flask 2 with one and one-half ounces of distilled water, one and one-half ounces dis

tilled over from 1 into 2, from 2 into 3 and back. No bacteria existed either in 1 or in 2 after fourteen days.

Experiment 4. Flask 1 charged with three ounces of the infusion, flask 2 with one and one-half ounces of distilled water. Distillation as above from 1 into 2 into 3 and back to 1, all clamps were then closed; after eight days bacteria were found in flask 1, but after fourteen days none were observed in flask 2.

Experiment 5. To two ounces of the infusion in flask 1, two ounces of water were added, flask 2 charged with Pasteur's solution. Clamp 1 and 2 closed. One ounce of 2 distilled into 3 and back, and the operation twice repeated. After eight days there were no bacteria in flask 2. Then clamp 1 was opened, the infusion boiled down to two ounces, and again the clamp closed in ebullition. Clamps 2 and 3 were kept open to allow the air to pass freely into 1. All clamps were closed. This experiment was repeated six times. In two cases bacteria were found after eight days as well in flask 1 as in flask 2. In the other four cases, after twenty-one days, no traces of living beings could be detected.

These experiments show very plainly,

1. The germinal matter of the bacterium is extinguished by the continual action of heat.

2. It is not extinguished under all circumstances at 212° Fahr.

3. The germinal matter exhibits a greater resistance to the action of heat in Pasteur's solution than in water, and a greater in the infusion than in Pasteur's liquid.

Whatever the cause of this protection may be it is at present impossible to say. It is true no one has yet seen the germs or germinal matter of the bacterium, but what we know of the minuteness of the germs of some monads, which are barely visible with the 1-50 object-

ive of Powell and Leland, and the size of which must be less than the 1-300,000 of an inch, justifies the supposition of their existence. Is it their minuteness which protects them for a time against the action of heat? This is not quite impossible, as will be explained in another place. But we may refer, also, to some other phenomena concerning the relation of heat to the molecular state of bodies in general.

Considering heat as a mode of motion, of molecular motion, it is well known that an increase of this motion, transferred to any unorganized or organized matter, will, at a certain point, alter its entire molecular constitution, producing a physical or chemical displacement of its molecules. But the quantity or the intensity of motion required for such an effect depends entirely upon the bodies or substances engaged, and upon certain circumstances which may influence the action.

Albumen coagulates at 145°; dry albumen may be heated as high as 212° without losing its solubility. Caseine is not coagulable, and globuline, (hämato-crystalline,) a compound perhaps of the highest order ($C_{600}$ $H_{960}$ $N_{154}$ $Fe_1$ $S_3$ $O_{179}$,) resists a displacement of its molecules by heat, up to 176°. Some of the offsprings of albumen exhibit very different qualities. Kollagen is transformed into glutine by boiling water, while elastine shows a remarkable resistance against its action. Steam and water at 212° are commonly said to destroy all organic beings and germs, yet undoubtedly not by the action of heat alone, but by the action of heat and water or steam. Many seeds may be heated dry, others in oil up to the same degree for a certain time without losing their germinative power, and even mammalia will exist, without injury, in rooms filled with dry air, of a temperature as high as 300° Fahr. Suppose now the germinal matter of an animalcule of the

lowest order, of a bacterium, a monad, to consist of an elastine-like and other proteinous compounds, the molecules of which are not displaced at once by the action of water or steam at 212°, there is no reason to conclude that all its germinative power would be destroyed after five, ten or fifteen minutes' ebullition. Now we must always keep in mind that we know still very little of the chemical constitution of living matter represented in the so-called lower forms of life, and the series of the proteinous compounds recognized by our chemists has not yet been closed.

In regard to the means adopted for the purpose of excluding all new germinal matter from the liquids, we meet with more difficulties, the less we alter the natural conditions of the experiment. Where the tubes or flasks were hermetically closed while in ebullition, by the aid of a soldering pipe, I have never observed any traces of bacterium, and seldom when sealing wax was used; but wax, sealing wax, etc., may contain germs. The porous porcelain plate employed by Huizinga will in no event answer the purpose. In his experiments where bacteria were not found, may not the vapor of mercury, by which the tubes were closed, have had some influence? The filtering of air or forcing the same to pass through sulphuric acid, gives at all times very discordant results, as the smallest bubble of air may contain germs which enter the liquid, and if only a few are safely introduced, we know they will be sufficient for the production of millions and millions of offspring. In the experiments of Davaine, the living particles which produce septicæmia, though introduced into the blood of an animal in a quantity only corresponding to the trillionth of a drop, by an infinite multiplication of their numbers, caused death.

It is therefore my conclusion that a single experiment, which establishes the possibility of preventing the occurrence of the forms of life, in liquids adapted to sustain them, by the employment of such simple means as those above mentioned, is convincing, or, in the words of Huxley: "There must be some error about these experiments, because they are performed on an enormous scale every day with quite contrary results. Meats, fruits, vegetables, the very materials of the most fermentable and putrescible infusions are preserved to the extent, I suppose I may say, of thousands of tons every year, by a method which is a mere application of Spallanzani's experiment." There is another reason why I can not give any credit to the objections made by Häckel and others, that we have to deal in our experiments with quite unnatural conditions. It is a fact well known to all experimenters, that substances exposed to heat for a time sufficient to destroy all imminent germs of life, are nevertheless, quite fit for a pabulum for organic life, and that the minutest quantity of living matter will in it carry on its life to indefinite reproduction.

I proceed to review the observations and the conclusions drawn therefrom by the naturalists, in regard to the laws of life.

In France, (Pouchet, Pelletier,) and in Germany, (Schaafhausen, Büchner,) authors have expressed the results of their observations in words which would settle the whole question at once, if their comprehension of observed facts was not open to the gravest objections. They pretend to have seen with their own eyes, by the aid of high magnifying powers, organic beings separated from liquids, containing dissolved organic compounds, just in the same manner as a crystal is separated from a solution. The distinguished Häckel, himself, seems

inclined to subscribe to such a belief when he speaks of a moner "as a structureless, uniform little mass of proteinous matter which represents, chemically, only one single albuminous compound." Nevertheless this moner is shown to be composed of a slimy matrix, in which numerous small particles are imbedded, and it may be called, at the same time, a protamœba. It nourishes itself by assimilation, reproduces itself by fission into a group of young; and slowly diffusive movements make manifest its contractility. It is developed by spontaneity. Nuclei and nucleoli appear in the uniform structureless little mass of albuminous matter, and soon it enters into the little more respectable society of the amœboids, which very likely already exhibit sexual differentiations, like some of the smallest monads, since I have observed them at times in a state of greater compactness and density, and in rapid motion, one revolving around the other, in a state of activity which undoubtedly stands in some connection with procreation, although I have not yet been able to observe another kind of multiplication as that by fission. Among the English naturalists, Bastian declares himself very decidedly in favor of "the ultimate similarity between crystalline and living matter," that is between the process of crystallization and the supposed spontaneous production of organic forms. May we be allowed first to explain the process of crystallization of the simplest kind, when a liquid throws out crystals of a compound which was dissolved in it.

A solution represents a mixture of heterogeneous molecules. The homogeneous molecules of the liquid, easily displaceable according to their state of aggregation or latent heat, are placed in such a manner between the homogeneous molecules of another compound of different latent heat, or molecular motion, that these

become as displaceable as the molecules of the liquid itself. In consequence of an increase or a decrease of molecular motion, the liquid, it is apparent, will exhibit altered capabilities in regard to its power of transferring molecular motion to the other heterogeneous molecules. Besides this, some certain peculiarities of the latter, may at all times influence the interaction, and establish so great a variety of relations between such heterogeneous substances, as may confound the simplicity of the fact. Nevertheless, all phenomena of dissolution are liable simply to molecular motion, and stand in direct proportion to that kind of molecular motion, which we call heat, and upon which the state of aggregation of all bodies is based. During solution, therefore, as well as during fusion, a certain quantity of heat always becomes latent, and hence it is that the solution of a substance usually produces a diminution of temperature, that is, heat is absorbed from all bodies which are in contact with the substances engaged. In certain cases, however, instead of the temperature being lowered, it actually rises, but this depends upon the fact that two simultaneous and contrary phenomena are produced. The first is the passage from the solid to the liquid condition, which always lowers the temperature. The second is the chemical combination of the body dissolved with the liquid, and which, as in the case of all chemical combinations, produces an increase of temperature. Consequently, as the one or the other of these effects predominates, or as they are equal, molecular motion in the form of heat will be expelled, or absorbed, or remain constant. Concerning the interaction between liquids and solids, the following laws regulate the phenomenon. 1. At a fixed temperature only a certain quantity of the solid is dissolved. 2. The solubility increases and diminishes

between certain limits, as the temperature or the molecular motion of the liquid rises or sinks.

Now it will be easily understood that in cases where the quantity of a dissolving liquid diminishes or its temperature sinks, a corresponding portion of the dissolved substance will be thrown out, according to a physical affinity, perhaps, in combination with a certain quantity of the dissolving agent or without it.

Concerning the form or the figure under which the solid appears, we know, regarding the law of isomorphism and dimorphism, that it depends for the most part upon the number, and therefore upon the arrangement of the atoms of which the compound molecule consists. Molecules of different atomical constitution must therefore themselves differ in form and figure, and although not visible to the eye, exhibit *de facto*, the principal form under which larger aggregations are perceived.

Now, as to the microscopical observations, in regard to the process of separation of a solid from a liquid, it is apparent, that the first moment in which the eye will find itself engaged by rays of light reflected from a solid aggregation within the uniform solution, will depend upon, first, the angle under which we observe; second, upon the quantity of light (the number of undulations) reflected; third, upon the sensibility of the retina of the observer himself.

Supposing, now, in reference to first and third, the most sensitive retina, and that we operate with the highest powers obtainable, would there not be in virtue of the second statement, at all times, a boundary beyond which no perception is possible? This may be disputed, but without reason. There is a certain law in nature which seems altogether unknown or too much neglected, that is, as far as we are able to conceive, that

all interaction in nature is related to quantity. This law is of universal validity, and no interaction and no conversion of motion can take place, except as regulated by quantity of matter. As little as one single longitudinal oscillation of an air molecule represents a sonorous wave and will be perceived by the ear, so little will one transverse undulation of an atom irritate the nervous elements of the retina of our eye. The motion of one or two single molecules can not be transformed into mechanical energy, and yet, molecular motion (heat,) and mechanical energy are mutually convertible in numerical proportions expressed by the quantity of matter in motion.

It is for this reason that all sensual irritability is in proportion to the quantity of matter in motion, which is to be transformed into nervous energy. When, therefore, in a mixture of two heterogeneous molecules, the refracting power of both, separately comes into action, and they are separately perceived by our eye, it is absolutely necessary for both substances to be present in an aggregation of such dimensions, that the number or the quantity of reflected or refracted undulations required for a substantial phenomenon, and for the transformation into nervous energy, are furnished. From this time only, the body will be distinguished by the eye, nevertheless we must suppose that an aggregation of some dimension may have existed long before, for we are not able to observe anything aside from an alteration of form produced by the process of growth. In the theory of the constitution of matter, we distinguish between atom, aggregate of atoms or molecule, and aggregate of molecules or body; in regard to the activity of matter, between motion of bodies, motion of molecules, and motion of atoms. Sound, heat, electricity, are phenomena of molecular motion; light and

chemical energy of atomic motion. Modes of motion are mutually convertible; the motion however of a single molecule can not be converted into mass motion, the motion of a single atom can not be converted in molecular motion, and inversely a motion of a molecule can not be converted into that of one atom; motion includes a multitude of actions. The analysis of a chemical process leads to similar conceptions. Chemistry teaches us, that for instance in water (88,9, O, 11,1 H, by weight,) one atom hydrogen is combined with one atom oxygen, to one molecule H O. Does this molecule represent water, steam, or ice, or the form under which H O seems to be bound in a crystal, or an organic being? Certainly not, because only a multitude of such molecules can enter into a substantial existence and into actual relations to other bodies. No body is divisible by itself or by another body, but by its molecules, and no molecule is divisible by another, but by an atom and no atom is divisible by another atom. So the indivisibility of the atom is only a quality of relative validity. But as all the properties of the chemical elements are changeable, when they pass into combinations, there remains one unaltered under all circumstances, that is their weight, and only in definite unchangeable proportions of weight do they combine. Heterogeneous atoms must, therefore, represent either equal spaces filled with unequal quantities of matter, or unequal spaces filled with equal. In both cases, however, all interaction which may take place between them is an interaction of quantities, so that the general law of quantity has even here its foundation.

It may be permitted us at this point, to take again into consideration those remarkable facts above mentioned, concerning the action of heat upon the germinal matter of the lower forms of life. The supposition that their

minuteness might protect them, at least for a time, seems no longer quite so unreasonable and vague, when we consider that the quantity of matter in action will doubtless have some influence upon the effect produced. The active quantity of heat transmitted to a body, must diminish with the size of the body itself, as the points of aggression diminish. The diffusion of heat is at any event a slow process and organic bodies belong to the list of bad conductors. According to Prof. Tait, "In a single drop of water there are a thousand quadrillions of ultimate particles. Each particle in a drop of water, is to the entire drop as the size of a walnut is to the earth," and it will hardly be granted that we recognize in an organic germ, nothing more than a compound molecule, but this does not in the least affect the law which regulates all interaction in nature.

Since there is no possibility of witnessing an act of origination in nature, we must allude to the theoretical views laid down, to assist our comprehension.

Analogy has, at all times, played an important role in the interpretation of natural processes, but with very dissimilar results. Häckel, in regard to crystallization and the formation of a Protista, has carried these analogies to their utmost limit. He acknowledges two formative principles in nature: the inner plastic energy, depending upon the number and the arrangement of the atoms, corresponding to inheritance in living forms, and the action of external forces, as temperature, atmospheric pressure, etc., by which a continual modification of the forms is produced, (the law of accommodation;) but there is one distinction, he continues, as the crystal grows by aggregation, so the organic being grows by intussusception. This is owing to their different densities, or the different state of aggregation, by which they are characterized. According to this theory, an organic

being would be assumed to consist, like a crystal, of molecules, of course in a peculiar, or *fourth* state of aggregation. This peculiarity threatens to overthrow the laws upon which the other three states of aggregation depend, if we do not acknowledge another energy as acting in nature, which, although it paralyzes the physical forces, appears not to be convertible into the same.

We have not yet the slightest evidence to justify the assumption, that an organic being consists of molecules; and that even the simplest moner, by the action of any of the physical forces should be divisible into its molecules, no one has asserted. Why, however, if it really consists of only one chemical compound, should this not be done, since other albuminous or proteinous compounds may undergo these changes without an alteration of their chemical nature? And, how can the transformation of a dissolved albuminous compound into a moner, by the action of the same physical forces, be assumed? There must be something wrong about those analogies, and a moner must represent more than Häckel seems inclined to admit.

Since every living thing is subjected to a continual change of its constituents, such transformations occur under the direct influence of life everywhere. Compounds in a molecular state are decomposed, and others in the same state excreted; but what changes they have undergone during these processes and what constitution of matter they have represented, of these we have attained no knowledge, by means of our chemical and physical examinations. No doubt chemical forces are active, and the formation of a chemical compound can not be considered as the only effect of chemical affinity. We have gained some familiarity with these processes, since the discovery and the separation of

those peculiar compounds, which are recognized as the direct causes of fermentation, putrefaction and digestion, which, under certain circumstances in the minutest quantity may continue chemical interaction almost *ad infinitum*. It is true they are created by the action of life, and our chemists have not yet been successful in producing one of them without the aid of life. The number of these substances must be almost as infinite as the organic forms themselves. In some instances they support life by transforming compounds into a state for assimilation, while in other cases they act as the most poisonous and life destroying agents, and the so-called vegetable alkaloids and the animal poisons, stand in a close relationship to them.

But although this illlustrates how life preserves itself, and by what means it may be developed, it throws very little light upon its ultimate causes and sources. The form remains unexplained.

Analyzing a crystal we find a geometrical body, in which the sides, the enclosed angles, the axis, stand in certain definite relation to each other. The body is mathematically constructed, without referring to its material composition, and the most heterogeneous compounds appear in the same figure. An equal quantity of one element may be replaced by another one, according to the law of isomorphism, without changing the crystal's figure, and numerous other combinations are recognized, as dimorph and trimorph. Upon the arrangement of the atoms, and upon the motion of the molecules against each other depends the invariability of the constructed form, and no geologically-recorded time has changed, no law of evolution developed the form. In a similar manner motion may be conceived. A mathematical curve is constructed in thought; it may be represented by a point or a celestial body in

motion, and the laws which regulate the undulations of a liquid, a solid, a gas, may be conceived of by substituting for each of these forms of matter, some imaginary substance. A chemical compound is virtually the same whether it appears under the form of a liquid, a solid, or a gas. This is not so in the perception of an organic being, which represents a perfect oneness, an insoluble unity of action, composition and form. Therefore one form is not equal to another; and the one is not equal to itself, from one moment to the other, although both are similar. We are not able, in thought, to separate the action from the substance which acts, or the substance from the figure. There is no geometrical body before us which matter constructs by its motion; if it were so, we must construct in thought, an organic form, by substituting an imaginary medium in motion.

In a moner, a cell with or without a membrane, the form is not separable from its essential nature, and no definition can be given which includes all or excludes one. It is therefore not comprehensible in thought how an organic form has been originated. It has not come into existence by an agglomeration of molecules, because no molecule is actually formed during the continual change of its constituents. This fact of change excludes the possibility of formation, and should we draw the parallel, so would the whole being, as each cell itself represents one molecule.

These considerations are the same, very probably, by which Häckel was governed, when he conceded that an organic being grows by intussusception. Intussusception demands an interaction of the *ultimate* particles of matter, of the atoms themselves. The distinction between a crystal and an organic being is therefore an essential one, and since no intussusception is thinkable

without a being that intussuscepts, so nothing can have been originated by such an act.

There is one thing in any event undisputed: that life proceeds from life. I can see no reason why this law, even if it is of universal validity, should interfere with the general law of evolution. "Evolution implies uniformity and continuity," *heterogeneity* without any doubt. Herbert Spencer gives us the following definition: "It is a change from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity, through continuous differentiations and integrations." How can this be comprehended? The continually operating causes which produce the heterogeneity, must either be conceived as inherent in nature, or as external supernatural forces. In the latter case Spencer's definition would just about cover a definition of Creation, while in the former, instead of homoogeneity, the *pre-existence* of *heterogeneity* is supposed. Continually operating causes exclude entirely the supposition of a beginning, of an act of origination, and interaction itself demands heterogeneity, through all time and space. All natural processes are therefore only comprehensible as facts of transformation, and the law of evolution expresses the nature of these transformations, as acts of relation in the midst of an infinite heterogeneity, as infinite as the universe itself. So the universal validity of the law of life, that life proceeds from life and from nothing but life, stands by no means in opposition to evolution, and if life is regarded as eternal, as replanted upon our earth "by the moss-grown fragments, from the ruins of another world," so will a hypothesis like this seem not more unscientific than any other. Why may we ask are only a few of the elements, which compose our globe, supporters and formers of life, while all the others are ex-

posed to the same acting forces? There is something aboriginal and immediate in life, which no history, no philosophy explains. And when it is said that "we are like colonists, like cultivators, upon this world," these words are the expression of a natural sense, perhaps of a truth, which seems approved in science by the conception of that first, that greatest of all the laws of life, which elucidates the others and points toward the disproportion, so evidently pronounced between life and inanimate matter—*the struggle for existence.*

## PSYCHOLOGICAL RETROSPECT.

### English Psychological Literature.

*Journal of Mental Science*, Vol. XVIII.—January, 1873.

Part I.—*Original Articles:*—The Madmen of the Greek Theatre, (No. 3,) J. R. Gasquet, M. B. The Religious Sentiment in Epileptics: James C. Howden, M. D. Lunacy Legislation in New Zealand: W. Lauder Lindsay, M. D. Tumors of the Brain in the Sane and the Insane: R. Boyd, M. D. On Larceny, as committed by Patients in the earlier stages of General Paralysis: J. Wilkie Burman, M. D. The Shower Bath in Insanity: John A. Campbell, M. D.

Dr. Howden has called attention to a peculiarity of the epileptic state, in the development of the religious sentiment, which has been little noticed by writers. Many instances are at hand, in the lives of leaders and founders of sects, and in those religious fanatics, who figured in the epidemics of the middle ages, notably that of the dancing mania. He reports several well marked cases occurring under his own observation, and introduces those of Anna Lee, the founder of the Shakers, of Emanuel Swedenborg, and of Mahomet, in all of whose lives there are evidences of abnormal nervous manifestations, of a cataleptic or epileptic character.

The causes of this undue development he finds in the nature of the disease, which, from the consciousness of infirmity and helplessness, begets a craving for sympathy, which in turn, finds a deep response in the highest development of hope—of religion. This is a very plausible theory, but will not explain the existence of the religious sentiment in a large class of epileptics, those who are unconscious of the presence of disease, and hence do not feel helpless, or look to others for aid or sympathy. However, it is like the "echo sign" in the writings of epileptics, a peculiarity of the disease, and worthy of careful record as a part of its history.

"Tumors of the Brain in the Sane and Insane." Dr. Boyd states, that in 1,039 *post-mortem* examinations, in the St. Marylebone Infirmary, there occurred 22 cases of tumors of the brain: 1 was insane, 2 were in a state of fatuity, and in 19 no mental derangement was observed. At the Somerset County Lunatic Asylum, in 875 *post-mortem* examinations, there were 14 cases of tumor of the brain. The article is continued through two numbers of the JOURNAL, and contains a history of all the cases. The largest tumor found was the size of a hen's egg, and the smallest, that of a pea. The symptoms observed were too diverse and varied, to admit of classification.

Dr. Campbell's paper is founded upon an experience with 118 patients, who have been subjected to treatment by the shower bath. The duration of the bath was for males, from a few seconds at the first applications, to a minute; for females, the time did not extend beyond a half-minute. They were given on getting out of bed, and were continued from a few days to two years; the average time of treatment being from one to four months. The mental states of the cases were

various, and included those of the recognized forms of insanity. Of 118 cases which were under treatment, 48 recovered, 20 improved in both bodily and mental condition, 18 improved in health; in 25 there were no effects, and in 6 ill-effects were observed.

In two young lads pneumonia occurred while they were getting the baths; they both recovered. The conclusions our author feels warranted in drawing, are that the shower bath is useful in puerperal mania, at the dull stage; in hysterical mania in young girls; in a state somewhat similar to the above, seen in boys and young men, dependent on sexual causes; and in cases in which persistent excitement exists without organic cause. There is nothing sufficiently conclusive in the statements here made to promote confidence in, or lead to the adoption of this method of treatment. In American Asylums, it has long since been generally discarded. In most of the institutions, the arrangements for giving shower baths have been removed, and they are now very rarely introduced in the new asylums.

Part I.—April, 1873.—*Original Articles:*—The local distribution of insanity, and its varieties, in England and Wales: T. S. Clouston, M. D. Notes on Epilepsy and its Pathological Consequences: J. Crichton Browne, M. D. The Madmen of the Greek Theater, (No. 4,) J. R. Gasquet, M. B. Tumors of the Brain in the Sane and the Insane: R. Boyd, M. D. Unifomity in Public Asylum Reports: J. A. Campbell, M. D. The Galvanic Current applied in the treatment of Insanity: A. H. Newth, M. D. The Asylums of Paris in 1872: Henry Sutherland, M. D.

The article of Dr. Clouston deals with only one of the main divisions of the subject stated in the title, and is to be continued. Regardiug "the local distribution of insanity in relation to the decennial increase of the population between 1861 and 1871." The rate of increase in the population for the period, was 13 per

cent. It is a noticeable fact, that in counties where the increase of population has been largest, the percentage of lunacy is the smallest, as in a list of counties with an increase of 17 per cent. the lunacy ratio is but 1-5, while in another series of counties, with an increase of but 9 per cent. the lunacy ratio is 2-8 per cent. the general average for the whole of England and Wales being 2–2. Another interesting point to be investigated is, whether the increase in lunacy in any way corresponds with the decennial increase of the population in the various counties of England. In the year 1861, there were 35,709 pauper lunatics, known to the Commissioners in Lunacy, and in 1871, 50,637, which gives an apparent increase of 41 per cent. for the period, but no one really believes that lunacy has increased at such a rate. From the best available data that can be obtained, the yearly increase for the past three years has been 3–6, for all England. The apparent increase in the metropolitan counties is well known to have greatly resulted from the opening of new asylums for imbeciles at Caterham and Leavesden. "The local distribution of insanity in relation to pauperism." Analysis here shows the very closest approximation between the amount of pauper lunacy and pauperism in the counties generally.

"The local distribution of insanity in regard to wealth." The author considers the rate of wages as the best test of wealth in the community, as wages is the poor man's wealth. In all the counties where wages are good the rate of lunacy is low, where the wages are lowest the lunacy rate is highest. As might naturally have been expected, the country shows itself more healthy than the town as regards the production of insanity, other things being equal. "So far these investigations clearly show that with certain exceptions where the population of a county rapidly increases, its lunatics are few, and

do not increase so fast in proportion to the people, the reverse of this being generally true also; that lunacy goes hand in hand with pauperism all over the country, and that the presence of uniformly diffused wealth among a people certainly seems to lower the rate of production of mental disease."

Dr. Browne is not a believer in the statements which often gain credence, that epilepsy increases intellectual activity and power, or in short, confers genius. Rather than accept this as the truth regarding noted epileptics, as Napoleon, Mahomet, Molière and others, he asks the pertinent question, how much greater might they not have been without the epileptic limitation. He further asserts, it would not, perhaps, be going too far to say that it invariably exerts a prejudicial influence on the minds of those who are affected by it, and that the statements which have been made to the contrary have arisen out of imperfect observation. "The experience of those who have seen most of epilepsy, will, I believe, confirm the assertion that no good thing can come out of it, and that it entails a blight and a blemish upon the mind of every one who is affected by it." In reference to pathology, the Doctor speaks from the examinations in 60 *post-mortem* cases.

It is in the different steps of the attacks that the explanation of the pathological consequences must be sought. As it is difficult to condense the statements on the pathological appearances, we quote at some length:

**In the first step in which that heightened excitability of the med. ulla oblongata, in which the disorder essentially consists, is awakened, we have spasm of the vessels of the brain, with temporary deprivation of blood, and a general commotion of the nervous elements very inimical to their healthy activity. In the second step,**

in which clonic convolutions occur, we have venous congestion and pressure on the brain, due to spasm of the muscles of the neck, and fixture of the muscles of respiration, and we may have the breaking up of the structure of the brain by a multitude of minute, or a few large clots. In the third step, in which coma remains, we have poisoning of the brain by imperfectly aerated blood.

Now, in these morbid conditions of the brain corresponding with the steps or stages of the epileptic attack, are contained the origins of all the pathological alterations in the cerebral hemispheres found in connection with epilepsy.

Foville, the most distinguished cerebral anatomist of his day, who drew his experience from the Asylum at Charenton, described a general hardening of the medullary matter extending throughout the whole encephalon, extraordinary dilatation of the blood vessels, and a rosy color of the gray matter of the convolutions as being always found in the epileptic brains which he examined. Bouchet Cazauvieilh, Morgagni, and Parchappe have given similar descriptions, and in recording the results of our researches in this asylum I have been compelled to use language almost identical with that of Foville. Putting aside these appearances in the brain which are unquestionably attributable to the mode of death or to intercurrent conditions, we arrive at this conclusion: that hypertrophy and induration are the characteristic brain changes in epileptic insanity. These will not be found in every case; in very recent, and in very far advanced cases they need not be looked for; but still in a large majority of cases they will be unmistakably present. In very recent cases they are not found, because they have not been fully established. In very far advanced cases they are not found, at least not in a marked degree, because ulterior changes springing out of them have obliterated them. In very recent cases the serious failure of brain power, which is sometimes seen, is to be traced not to the hypertrophy and induration of the organ, to which the same kind of failure, a little further on in the disease, is ascribable, but to a molecular perturbation analagous to what happens in concussion. The brain is suddenly thrown out of gear by the spasm in the contractile fibres of the vessels, and has not time to recover itself before it is again deranged by a recurrence of the spasm. That this is so is indicated by the fact that deep dementia has been observed to follow a series of attacks of *petit mal*, in which no clonic convulsions nor cerebral congestions occurred, but merely momentary unconscious-

ness with pallor of the face. Persistent mental weakness, however, does not follow *petit mal.* I have never seen a case of genuine continuous epileptic dementia which was not dependent upon the *haut mal* and the changes which the *haut mal* brings about, chiefly through pressure upon the cerebral tissue and cerebral hyperæmia. It is a popular observation that pressure and hyperæmia lead to hypertrophy. The excitation of pressure induces too copious a flow of blood, and increased growth and bulk ensue, and this is particularly apt to happen when the pressure is interrupted in character and only occurs from time to time. The first effect of the interrupted pressure which is applied to the brain in epilepsy appears to be a genuine hypertrophy and augmentation in volume. But hypertrophy is generally partial, and even when it affects whole organs it is manifested principally in certain textures and so the hypertrophy of the brain in epilepsy is manifested chiefly in the connective tissue. A kind of fibroid substitution slowly but surely goes on in those parts which are periodically subjected to congestion and induration, as well as an augmentation in volume ensue. The hair becomes coarse and the skin of the head and face hard and thick, and it is a noteworthy and well known fact that wounds of the head and face heal in epileptics by the first intention; that is to say, without any inflammatory process a formation of granulation tissue takes place, and this splits up into fibrils and forms adhesions. Then the skull becomes thickened also, and when it is removed the brain expands as if relieved from compression, and feels unusually dense and hard when touched. The specific gravity both of its gray and white matter is greater than in any other class of lunatics—and the absolute weight of the brain is also decidedly higher. The convolutions are flattened, and the sulci are mere lines, and do not gape nor contain fluid. The membranes show no signs of inflammatory disturbance. When the brain is cut into it is tough and firm, the gray matter being dark and the medullary white and glistening. The ventricles are of small size. Around the pons Varolii and medulla oblongata, and especially on the floor of the fourth ventricle, redness and vascular dilatation are visible, and the vessels when measured are found considerably distended, owing both to increase in their sectional area and thickening of their walls. These are the usual appearances in the brains of persons who have labored under epileptic insanity, but they are subject, of course, to numerous variations. Thus a spotted, blotchy, marbled appearance of the medullary substance may be seen when an attack, or group of

attacks, has immediately preceded death, and some atrophy or wasting, with opacity of the arachnoid, may be remarked when the disease has been long protracted and has passed into epileptic stupor. This latter condition of the brain is referable to impaired nutrition, owing to the thickening of the vessels, or to gradual contraction of the hypertrophied fibrous tissue, and puckering of the brain, if it may so be termed.

Death during an epileptic fit, or immediately after it, is an exceedingly rare occurrence, and is due to rupture of vessels within the cranium. The reason of this is found in the hypertrophied condition of the vessels, a provision of nature to prevent the occurrence of rupture, and also to the fact that atheroma is so rarely found in cases of epilepsy. Dr. Browne has never seen an instance of it. He calls attention to the numerous extravasations of blood in minute points under the skin. These are more frequent after an attack of status epilepticus. It is to their presence that the singular lividity of the countenance, in these cases, is due. It is reasonable to suppose that these miliary hæmorrhages occur in the brains of epileptics, and these would explain many of the mental symptoms observed after a severe fit. They would account for the protracted coma, and for the bewilderment and headache which accompanies it, and the slow clearing off of these as contraction and absorption advance. These minute extravasations have been seen in the brain. Larger hæmorrhages are probably common causes of paralysis, occurring in the course of epilepsy. Death from exhaustion, after epileptic mania, is not a frequent accident, and the Doctor has seen but two cases of it. He believes it only occurs when the strength has been reduced by some other disorders of health.

The status epilepticus is the most common cause of death among the epileptics of the West Riding Asylum. The brains of those thus dying present, in the most

marked manner, the hypertrophy and induration referred to as characteristic of the disease. The gorged sinuses, discolored tissues, and numerous puncta, prove that congestion preceded death. The whole aspect of the brain and of other organs of the body of a patient who has died during the status, call to mind the appearances found in cases of asphyxia. It is impossible to point out any distinctive differences in the *post-mortem* appearances, between patients who have died of suffocation, and those who have died in the status. The prone decubitus of chronic epileptics is a noticeable feature of the disease: of fifty epileptics in the Asylum, forty lie habitually half turned on their faces, and ten are apt to turn over during a fit. In general paralytics the decubitus is dorsal. The tendency of epilepsy, when life is not cut short by the accidents of the disease, is to a condition of mental fatuity, called epileptic stupor. The brains of those dying in this condition, "present traces of former induration, the substance being tough and leathery, but the hypertrophy has given place to a certain degree of atrophy. The fibroid tissue formerly swollen and hypertrophied, has undergone contraction. The proper nervous elements, so long subjected to compression, have wasted; the thickened and distended vessels have failed to minister fully to nutrition, and so even softening may have set in. A special temperament or diathesis may help to the incursion of the epileptic stupor and atrophy, as also may repeated attacks of the status epilepticus or apoplectic clots exercising pressure. The atrophy is evidenced by some opacity of the arachnoid, diminished size of the gyri, and enlargement of the sulci, which also contained some compensatory serous fluid, a quantity of which generally occupies the enlarged ventricles. The atrophy of epilepsy is moderate in

degree." The whole article is one of great interest, and is enriched by the recital of cases intended to illustrate the different points.

Dr. Newth reports 15 cases of insanity treated by galvanism: of these 9 were of cases of melancholia, 3 of mania, 1 of dementia, 1 of locomotor ataxy, and 1 of progressive paralysis. Several of the cases of melancholia improved under the treatment. In three of them the improvement was marked, and was directly attributable by the author, to the use of electricity. The conclusion drawn from this record is, that when there is a want of tone in the nervous system, the continuous current has a marked beneficial effect, and that if after a few applications there is an increase of force, and slightly of frequency in the pulse, there is a great chance of the treatment being successful.

PART I.—July, 1873.—*Original Articles:*—Address on Idiocy: John Charles Bucknill, M. D., F. R. S. The Use of Digitalis in Maniacal Excitement: W. Julius Mickle, M. D. Consciousness and Unconcious Cerebration: N. S. Davies, B. D. The Madness of the Greek Theater, (No. 5,) J. R. Gasquet, M. B. The Morbid Psychology of Criminals: David Nicolson, M. B. On Testamentary Capacity: Sir James Hannen. "Eugene Aram." A Psychological Study: J. Balfour Browne, Esq.

The address, by Dr. Bucknill, was delivered at a meeting of the Governors of the Birmingham and Midland Counties Asylum for Idiots. He briefly traces the rise and progress of this charity from its incipiency in 1800 to the present time. The first idiot who attracted the attention of scientific men, was the savage man of the Aveyron, as he was called, who had lived all his life in the forest without contact with his kind. Pinel, then of the Bicêtre, pronounced him an idiot, but Itard, of the Asylum for the Deaf and Dumb, com-

batted this view, and for five years educated him as a savage. At the expiration of this time he gave up the task in disgust. His labor though so fruitless in this instance was not barren of results, as the principles of training and treatment he adopted have served as the basis of the physiological education of idiots. His example was followed, and his method was developed and perfected by Séguin, the first of all idiot teachers, whose book is the standard work upon the subject. He taught in the school organized in the Bicêtre by Voisin and Leuret, physicians to the Asylum in 1840. In 1839 an Asylum was established for the Crétin idiots, near Interlachen, Switzerland, for which subscriptions were sought in England. This aroused the attention of the English mind to the subject, and in 1846 the first Idiot Asylum in England, was established by Miss White, of Bath.

The doctor pays a high compliment to a countryman of ours, as follows: "The most trustworthy authority we possess on the causes of idiocy, is contained in a report of Dr. S. G. Howe, the celebrated teacher of Laura Bridgman, and other commissioners appointed by the Governor of Massachusetts, in 1848, to ascertain the cases of idiocy in that state." He mentions by their dates the establishment of the other asylums of England, speaks highly of the success that has attended their efforts, and makes a personal appeal in favor of the institution at Birmingham.

The "Use of Digitalis in Maniacal Excitement," by Dr. Mickle, is an admirable paper, and throws much light upon the therapeutic qualities of this drug. The preparation employed was the Tincture of the B. P., and the average dose 30 minims, three times a day. It was given in cases of chronic mania with paroxysms of

excitement. The average length of time, in which benefit followed its use, was 26 days. It was often given for a season, and then discontinued, to be renewed upon the occurrence of a paroxysm. In other cases of chronic mania treated by digitalis, the excitement was more diffused and uniform, either continuous or sub-continuous. The table presented gives the record of 41 patients, who took digitalis on 66 occasions. They were decidedly benefited in 77 per cent. of all the trials. The greatest advantage was derived in the paroxysmal cases. In some instances, the later course of the affection was milder, as if the nervous power was recuperated during the period of quietude enforced by the drug. The effect upon the pulse was studied, and the conclusion reached, that when digitalis checked the paroxysms, it reduced the high pulse associated with them. In some cases where digitalis was not calmative it caused sickness: anorexia, nausea, and vomiting, were occasionally produced. Where emesis occurred, the excitement was reduced, though at times only temporarily. Large or increasing doses were carefully avoided, and comparatively small doses were found to exert a calmative and tonic influence, on both cerebral and cardiac agitation. Any marked alteration of cardiac rythm or sounds, supervening while digitalis was being taken, was felt to justify immediate cessation of its use. They were, however, of rare occurrence.

In the article on "Morbid Psychology of Criminals," by D. Nicolson, M. B., there are some statements of interest in regard to the presence of neuroses among criminals, and in opposition to the conclusions of Mr. Bruce Thompson, of Perth Prison. Mr. Thompson says, that the number of physical diseases are less than the psychical, and that the diseases and causes of death

among prisoners are chiefly of the nervous system. Mr. Nicolson says, that diseases of the brain and nervous system, cause somewhat over 9 per cent. of the deaths occurring in the convict prisons of England, and that they rank second among the causes of mortality among prisoners. Simple nervousness is by no means prominent among criminals. One seldom, if ever, comes across an epileptic in the advanced and utterly helpless stage. Epilepsy is often so well feigned, that it is only by accident that the imposture is detected. In prisoners it is almost always accompanied by strong convulsions, and *petit mal* does not show itself.

PART I.—October, 1873.—*Original Articles:*—The Presidents address before the Medico-Psychological Association 1873: T. Harrington Tuke, M. D., F. R. C. P. The Morisonian Lectures on Insanity 1873: David Skae, M. D. The Treatment of Insanity by Electricity: George Beard, M. D. Five Cases of Idiocy with *post-mortem* examinations: W. W. Ireland, M. D. The Function of Brain and Muscle considered with relation to Epilepsy: J. Thompson Dickson, M. A., M. D. Antiquarian Scraps Relating to Insanity: T. W. McDowall, M. D. The Morbid Psychology of Criminals: David Nicolson, M. B.

Dr. Tuke in his address calls the attention of the medico-psychological society to the following topics.

1. Is medicine, in its narrow sense, of paramount importance in the treatment of mental disease?

2. The increase of insanity in England?

3. Can the present system of treating insanity be improved?

To the first question, the Doctor gives an unqualified affirmative reply, and thinks it of the utmost importance that the association should, upon this subject pronounce no uncertain opinion as, "A cloud of Scepticism has appeared in the horizon of Modern Science, has

darkened Medicine, and would, if it could, obscure still higher truths." He asserts that a majority of the members of the society show in their practical work and earnest writing, that they are true to their faith as physicians, and can trust the resources of their art with confident hope in their still further developments. He then refers in detail to the therapeutical labor done, in the record of the experience of the different members in the use of various remedies.

In treating of the increase of insanity, Dr. Tuke feels obliged, by the statistics upon the subject, to dissent from the opinion of Dr. Robertson, that the increase is apparent rather than real. By a table appended he shows there is an annual increase of 2000 insane persons in England. This number has raised the per centage in ten years from 2.09 to 2.58, per thousand of the population:

"The hypothesis has been advanced, that the progress of civilization, and the spread of education among the masses, have with a greater activity of brain produced a corresponding increase of nervous exhaustion and disease. This is a melancholy theory; it would unsettle our belief in the onward progress of mankind, it would shake the very foundation of our faith. Such a theory receives no support from statistics; if intellectual training and mental exertion were causes of insanity, then it should be more frequent in those ranks in which during the last half-century, the mental powers have been so much more cultivated and exercised. The statistics of lunacy show that the increase of insanity has been amongst the poorer classes only. The commissioners in their eighth table state the per centage of poor lunatics to the total number of the poor to be 3-66 per thousand, in 1859, but the large proportion of 5-98 per thousand, in 1873, or nearly double in fifteen years."

Dr. Tuke does not suggest improvements in detail in the treatment of insanity, but on comparison of the cures effected in various institutions, finds a great

difference in the success, the cures varying from 55, to but 28 per cent. per hundred as calculated upon the admissions. He would have such improved methods employed as would raise the average of recoveries from the lower to the higher rate mentioned. He says, let there be no Gheel colonies, no national change in a system that at its best is so successful. There is noted a diminution of the number of insane in the upper classes which is attributed to the improved knowledge of the disease by the medical profession, hence, arises an earlier recognition of the malady, and a quicker application of remedies.

"The Morisonian lectures for 1873," were largely prepared by Dr. Skae, who held the appointment of lecturer. The disease from which he suffered, and which finally caused his death, prevented their completion and delivery. At his request, and by consent of the patron and President of the college, Dr. T. S. Clouston, formerly an assistant of Dr. Skae, was selected to take his place. The subject of this lecture, is the classification of insanity in accordance with the forms of disease, or of its etiology, rather than the mental symptoms. The arguments in favor of such a classification are presented, and the objections stated and refuted. It is not within our province to comment upon this subject at length, nor need we give any extended notice of the plan. It is substantially the same that has for some years been before the profession, and is already in their hands. The lecture is one of great interest, and the subject is ably handled.

In the paper on "The Function of Brain and Muscle," Mr. Dickson combats the views expressed by Dr. Hughlings Jackson, in his paper, "On the Anatomical, Physiological and Pathological Investigation of Epileptics."

In the first place Dr. Jackson starts with the statement that the "Normal function of nerve tissue is to store up and expend force," and he says, "It is true that this is the function of *all* organic matter, but it is *par excellence* the function of nerve tissue. There are *but two* kinds of alteration of function from disease. Saying nothing of degrees of each, there is on the one hand loss of function, on the other over-function (not better function.) In the former, nerve tissue ceases to store up, and therefore to expend force. In the latter, more nerve force is stirred up than in health, and more is therefore expended; the nerve tissue is "highly unstable."

But we may ask, what is the proof that the normal function of nerve tissue is "to store up and to expend force?" By what means does it store it up? how is it expended? and by what mode of motion is this force to be expressed? Dr. Jackson answers some of these questions; he says "there are many varieties of discharges. Defined from paroxysm, an Epilepsy is a *sudden*, excessive, and rapid discharge of gray matter of some *part* of the brain; it is a local discharge. To define it from the functional alteration, we say there is in a case of epilepsy gray matter which is so abnormally nourished that it occasionally reaches very high tension and very unstable equilibrium, and therefore occasionally 'explodes.'"

Now this statement involves the notion that the nerve forces behave as statical electricity, that it is capable of being accumulated in the cells of the gray substance of the brain, as the electricity is accumulated on the surface of the glass plate, and that it discharges or explodes in the same manner as electricity discharges from an electrophorus or a Leyden jar. That such should occur is not only improbable, but impossible. The brain is not even a voltaic battery. Still less is it a statical electrical machine. Those who would consider it as a galvanic apparatus have only to compare it with the electrical lobes of the torpedo, to see that there is no alliance; and though certain deflections of the galvanometer needle have been obtained in experiments upon brain and nerve, there is no proof that these deflections resulted from galvanic currents proceeding from the brain as a battery; indeed, it seems much more likely that they were Thermo-electrical currents developed in the course of the experiments. In whatever way nerve force may be correlated, it certainly is not identical with galvanism; still less is it identical with electricity. Therefore, the idea of sudden and rapid discharges, unstable equilibria, and explosions must be put out of the category.

The author asserts that the function of a healthy brain is not to give out discharges, but to maintain control, and that the badly nourished brain, or as he has commonly found it in epileptics, the atrophied brain, loses its power of maintaining control, and the function becomes imperfect or irregular, and, under some circumstances, altogether ceases. The author maintains that, the seat of the expenditure of force in any movement is in the muscles, and not in the brain. Again that the function of muscle is contraction and movement, and when muscles are perfectly normal they will, if liberated from control, perform their function spontaneously, and will continue to perform it until their potential energy is exhausted. He therefore, from the evidence obtained, concludes definitely that the muscular contraction and spasm in epilepsy is the necessary consequence of a loss of cerebral control.

He explains Dr. Ferrier's experiments as follows:

He applied electrodes to various convolutions, and got contractions of corresponding muscles. Why? Not because mandates were sent from the convolution to the muscle, but because the Faradization exhausted the convolution, and the muscles contracted because they were deprived of their control. Then, again, general convulsions occurred from time to time in the course of Ferrier's experiments, these general convulsions being the result of a more or less general exhaustion of the brain from the experiment performed upon it. They certainly did not proceed from electrical force stored up in the brain. And I can not conceive how a current of Faradization passing through the brain or through any part of it can do otherwise than effect chemical change and therewith exhaustion.

Epilepsy, however produced, whether by artificial experiment or by nature's experiment (to use Dr. Jackson's language) from disease, is not a display of sudden and ruthless expenditure of stored up force, but is the manifestation of a condition of weakness and exhaustion, the primary seat of which is the surface of the brain; the exhibition of strength we further see is the loss of the potential energy of muscle, which it is the function of the

nervous tissue to control and guard, and in the muscular exhaustion is to be sought the cause of temporary paralysis which often succeeds epilepsy.

Antiquarian Scraps, is a collection of odd and curious superstitions, relating to the cause of insanity, which existed centuries ago in England and Scotland. They are merely thrown together without pretension to chronological, or other order, and most of them bear date in the seventeenth century, some of them are quotations from Shakspeare. They have value as curiosities of the literature of insanity, and as illustrations of the crude and senseless notions which prevailed upon this subject.

## BIBLIOGRAPHICAL.

### REPORT OF AMERICAN ASYLUMS FOR 1873.

MINNESOTA: *Seventh Annual Report of the Minnesota Hospital for Insane:* 1873. Dr. C. K. BARTLETT.

There were in the Asylum, at date of last report, 247 patients. Admitted since, 140. Total, 387. Discharged recovered, 37. Improved, 19. Unimproved, 2. Died, 26. Total, 84. Remaining under treatment, 303.

During the year, building operations have been continued; the center, or administration building, is under contract to be completed in February, 1874, and another section and return wing on the women's side, by August next. Accommodations are now provided for two hundred patients in the new Hospital, while one hundred occupy the old structure. "Ill health," "intemperance" and "epilepsy," figure most largely in the table of causation. The idea that education is productive of insanity is combatted, principally by an ex-

tract from the article of Dr. Jarvis upon the "Relation of Education to Insanity," in which he arrives at the conclusion that insanity is the result of an *imperfect* civilization, and of an *incomplete* education. The neglect of men to care for themselves is the potential factor in the production of mental and physical enfeeblement, of disease, of insanity.

IOWA. *Seventh Biennial Report of the Iowa Hospital for Insane:* 1872–73. Drs. MARK RANNEY and H. M. BASSETT.

There were in the Hospital, at date of last report, 501 patients. Admitted since, 562. Total, 1,063. Discharged recovered, 160. Improved, 123. Unimproved, 157. Died, 128. Total, 568. Remaining under treatment, 495.

The report of Dr. Ranney covers twenty months of the biennial period. It is occupied with the general detail of the improvements carried out during this time, and with the future requirements of the Institution. Until the opening of the new Asylum at Independence, the Hospital was greatly overcrowded, the number of patients being almost double the proper capacity. A new reservoir has been completed, a new slaughter house built, water-closets have been constructed, changes in the ventilating shafts made, and other improvements in the buildings, and in the ornamentation of the grounds inaugurated.

Dr. Ranney gives his opinion of the law, which has now been in operation more than a year, entitled "An Act to protect the Insane." As strong efforts have been, and are now being made to enact a similar law in various states, this opinion of one of acknowledged ability and expertness, and who has witnessed its practical operation, is of interest and ought to have weight:

Although a great deal might be written, it seems only necessary to briefly summarize the effect of the law thus: It takes from the

superintendent, in a large measure, the moral and intellectual control, universally believed by alienist physicians to be an important part of any appropriate treatment of the insane; it seriously interferes with the general internal order and system based upon the abundant experience and labors of distinguished men for more than half a century; it certainly prevents recovery, and will therefore increase the proportion of chronic insanity in the community, already heavily enough burdened; it causes patients to be prematurely removed while still entertaining perverted or disordered feelings and notions with regard to treatment and many things associated with their disorder, giving rise to baseless prejudices in the community, and, hence, it prevents many insane persons being sent to the hospital till everything else has been tried and failed, and the curative period has passed; it unjustly impugns the integrity of the officers of the hospital, and is not calculated, however intended, to increase their zeal and interest in their work; it takes some valuable time, that might better be devoted to other work, to make answer to gross and baseless charges and complaints which it seems to invite; it creates a committee attended with no inconsiderable expense to perform duties, that can as well or better be performed by the board of trustees, most of whom serve faithfully for such periods as to become intelligently acquainted with the management and needs of the hospital, and therefore are able to wisely apply any rule or measure of government, and make suitable recommendations for additional means and facilities that may be needed; and, finally, it neither has done, nor can such a law ever do, any good, and I hope for the honor of the State, as well as for the welfare of the insane and of the hospital, it will be speedily repealed.

These candid remarks of the Doctor called forth a stringent criticism from Governor Cyrus C. Carpenter, in his annual message to the Iowa Legislature at its last session. Regarding the personalities in which he indulges we make no comment, as they are entirely a matter of individual choice and taste. He says: "I am gratified that the committee, (appointed under the act,) were able after searching investigation to report the affairs of our Hospital, administered with so much faithfulness, fidelity and professional skill. By this

report they have added to the professional reputation even of the official, who in his report treats them so cavalierly. But the fact that the Superintendents and employes of *our* hospitals are above reproach, does not prove that among all those who have to do with the insane in the different hospitals of this country there may not be now and then one who would, if left unwatched abuse his power. This was shown in the gross abuses of the Bloomingdale Hospital in New York, which were brought to light by the tact and enterprise of a newspaper correspondent." We do not suppose the Governor would willfully misrepresent the facts, but believe his attention had not been called to the report of the commission appointed by Governor Hoffman of New York, to investigate the charges of "gross abuse," made by newspaper correspondents, before mentioned. This commission was composed of the Attorney General of the State, of a member of the Board of State Charities, and one of the most distinguished physicians of the State. We make an extract from the report.

"In regard to the charge made against Bloomingdale Asylum in the public prints, we think that in order to do justice, both to the Institution and the public, we may fairly say this; that the gross cases of mismanagement and misconduct charged against it have not been substantiated, and that gross injustice has been done to the Institution in representing it as the scene of outrages and habitual maltreatment of patients." The report of Dr. Bassett gives additional information of the workings of the law:

> Under the operations of the law granting to all the inmates of the hospital the same post-office right as are granted to citizens outside of the hospital, a very large correspondence has been carried on. On the 22d of April, 1872, all restrictions upon the cor-

respondence by letter between patients in the hospital and the outside world were removed, and since that time every inmate of the hospital has enjoyed the privilege of writing "when and what he pleases," without the exercise of any censorship on the part of the officers of the hospital. A record has been kept of the number of letters sent to the office in Mount Pleasant during this period of a little more than eighteen months, and it amounts to five thousand eight hundred and seventy-six. It is judged that about the same number of letters have been received by patients within the same time.

Kind hearted but injudicious friends have not unfrequently imparted news to patients of an unfortunate character, at an untimely period, with such results as to have undone in a moment all that by patient labor and watching, extending over a period of weeks or months, had by slow degrees been accomplished. In a good many instances money has been sent to patients who did not need it, and who could not use it, which has been an inducement to elopement, and has resulted in efforts to get away from the hospital which might not otherwise have been made. I hold in my possession a package of opium, sufficient in quantity to destroy life if taken at a single dose, recently sent in a letter to a patient, who, a week before his admission to the hospital, had attempted suicide by cutting his throat. He had written to his friends that he was restless at night, and could not sleep, and wanted "something to quiet his nerves."

From an editorial on "Legislation for the Insane," in the *Philadelphia Medical Times*, of March 14th, we extract the following remarks:

Can any one tell us by what fatality it is that amateur philanthropists and the chosen legislators of the State, when undertaking to promote the interests of the insane, frequently seem to have as completely lost their wits as the poor creatures who have awakened their sympathies? Certainly, the total ignorance of insanity and the ways of the insane, the palpable absurdity, the gross violations of common sense, that mark many of their performances in this direction, would be scarcely conceivable without the testimony of actual experience. During the last half-dozen years, many of our States seem to have been endeavoring to outdo one another in absurd and mischievous legislation for the insane. That demagogues should find it a sure card to clamor about tyranny, and

wrong, and people's rights, and that amiable men sincerely anxious to do good should be instant, in season and out of season, with their pet schemes for accomplishing some unwise, if not impracticable, project, is what might be expected in the ordinary course of things; but it is surprising to see how readily, in a matter of so much importance, involving the peace of families and the safety of individuals, legislators stultify themselves by enactments pre-eminently foolish.

A few years hence, it will become one of the curiosities of human credulity that, in the seventh decade of the nineteenth century, a poor crazy woman, relying only on her nimble tongue, visited the legislatures of several of the States, and persuaded them to pass an act, framed by herself, for the government and surveillance of their hospitals for the insane; an act ignoring every principal of moral management supposed to be established by the experience of men enlightened by the science and imbued with the humanity of the age, and fitted only to introduce into those abodes of peace, quiet, seclusion, patience, and trust, a state of perpetual restlessness, anxiety, irritation, and distrust. Although these institutions are controlled by Boards of Trustees or Managers, comprising men whose character entitles them to unlimited confidence, yet her project provided another board, entirely independent and uncontrolled, and armed with plenary power to visit the hospitals whenever they pleased; to enter every hall and room, unaccompanied by any officer of the house; to hear every patient who had any complaints to make; to call before them the attendants, and sit in judgment on their conducts as represented by the patients, and to discharge both patients and attendants, without let or hindrance from any other authority. To inspire the patients with distrust of the officers, and withdraw them as much as possible from their control, a letter-box is to be placed in every hall, into which the patients are directed to drop their letters, sealed; and the officers are bound under heavy penalties to stamp and forward them, unopened, to whomsoever they may be directed. Letters to patients are also to be delivered unopened.

An act embodying these provisions was passed by the legislature of Iowa a year or two since, and by that of Maine, if we are not misinformed, the present winter. We are glad to say that in some other States where this woman has labored she has not been so successful, although with that sort of glamour which bewilders so many persons of deranged intellects, she imagines, and so represents that she has never failed. What the result has been in

Iowa we learn from the reports of Dr. Ranney, the late superintendent, and of Dr. Bassett, his successor, premising that the former, after a service of eight years long, highly creditable to himself and incalculably valuable to the hospital, resigned in disgust. He says that the authority of the officers was superseded by another, guided by no knowledge of insanity, and working under the profound conviction that every officer and employé of the hospital was abusing his trust; that the latter soon came to be regarded by the patients as their natural enemies and oppressors; that all the salutary influences springing from their proper relations to each other were destroyed; that the habit of writing letters, and expecting replies that did not always come, produced in the patient a state of chronic irritation not very favorable to recovery; that friends were alarmed by their stories of abuse; that the time and temper of the officers were taxed beyond endurance in replying to the anxious inquiries and complaints thus produced; that the best attendants refused to remain where they were perpetually charged with wrong-doings and condemned without a fair trial; and that many a patient was prematurely removed, to drift, very likely, into chronic insanity. Dr. Bassett testifies to the same results, and speaks particularly of the evils arising from the unrestricted correspondence. To any person possessing the faintest sense of propriety or the smallest modicum of common sense they are shocking enough, but to the average legislator, no doubt, they are the welcome outcome of a blessed reform.

The legislature of our Commonwealth has committed no folly exactly like this. It has placed no letter-boxes in the halls of the hospitals, and no case of suicide from opium can be fairly charged to its account. But it has made it a penal offence for the officers to withhold any letters of patients addressed to their counsel,—meaning thereby any one they happen to hear of as a lawyer,—or to debar the latter from seeing and conversing with the patients, if they wish it. The act is of little importance, because, with the kind of freedom now enjoyed by the inmates of our hospitals, letters may be written and smuggled out every day in the week: and lawyers enough will be found ready to "take hold," provided they can see any money in it. The patient may have nothing, but his friends may do the handsome thing rather than to be dragged into court to reveal the troubles and trials of the family. Revolutions, it is said, never go backwards: so in the fulness of time we may have here letter-boxes in the halls, whereby men of proverbial wisdom and rudence will proclaim their follies to a jeering world,

and women, delicate, refined and modest,—wives, mothers, sisters, daughters,—moved as they often are in insanity, by the coarser feelings of their nature, will reveal their inmost thoughts in a manner, the consciousness of which, on recovery, will overwhelm them with mortification and dismay. This is shocking no doubt, to every person of any proper sensibility; but let the public advance a little further in its contempt for all special knowledge, and be more ready on any matter of insanity to follow the lead of crazy women and amateur reformers, rather than the counsels of of those who have made it the study of their lives, and we shall be following the example of Iowa and Maine. Follies of the kind we have been describing we shall always have, so long as people talk of what they know little or nothing about, and, under pretence of righting some great wrong or reforming some flagrant abuse, obtain ready credence from those who know as little about it as themselves.

The report of the visiting committee is also before us, and we can see just what has been accomplished. The range of duties under the law, as understood by them, is, to ascertain from time to time whether any of the inmates are improperly detained in the hospital, or unjustly placed there; whether the inmates are humanely and kindly treated; to correct existing abuses, discharge employes and attendants, for causes specified in the statute; to see that patients are supplied with ink and stationery for letter writing, that inter-communication with the outside world by letter shall not be interfered with, and keep printed posters of the names, and post office address of the visiting committee in each ward, and to make annual reports to the Governor.

An investigation was held regarding the improper detention of three cases. In one, the patient was removed pending the examination. This was her second commitment to the Asylum, from which she was before discharged recovered.

Another case was manifestly one of chronic insanity, but the patient pleaded so strenuously to be set at lib-

erty, that the committee granted him a trial, saying if it did not prove best he would likely find his way back to the same hospital.

The third case is still under advisement. In one or two other cases, further developments are awaited. The committee acknowledge themselves puzzled by the so-called cases of moral or intellectual insanity.

Four cases of alleged mal-treatment, have received a thorough investigation, but the complaint was not sustained in either case. No formal report was made concerning the matters in the third division of duties devolving upon the committee. It is presumed however that these were well attended to, from the number of letters sent out. Upon the general management of the institution as to order, discipline, neatness, cleanliness, the classification of patients, and the dietary, the committee speak in unqualified praise. The air of some of the wards was not as pure and wholesome as could be desired but, this is attributed to the overcrowding, and to imperfection in the system of ventilation, and will admit of remedy.

Such is in short the meager result on the credit side of the commission, though we fail to see any benefit to the insane, or the people of the State. The extracts from the Asylum reports, show the opposite leaf of the ledger. The board seem to have performed their task without prejudice, and with some appreciation of the difficulties under which the responsible head of such institutions constantly labors. There is one feature of the report which is noticeable, and significant, viz: the complete dependence of the committee upon the officer of whose ability they are made the judges, and whose management they are to investigate. His expertness and knowledge have been freely furnished, and as freely used by the commission. The consistency of such a

course does not appear, nor in truth would there seem to be any necessity for the existence of such a body. The State has already placed the Asylum under the control of a responsible board of managers, of men appointed by the Governor, under legislative action, for their fitness for such a trust. To them should be entrusted the care of the institution, and we submit the question, does not the State stultify itself by creating another board to watch this and to divide its powers? What is to be the limit of this surveillance, and when will it cease?

Modern philanthropy seems to have run mad upon this subject, and a little popular favor and notoriety can be gained by working upon the credulity of the people, regarding the danger to personal liberty from improper confinement in asylums. Each year numerous measures are introduced into legislatures, to correct imaginary evils. In Ohio, an effort is being made to enact the law of trial by jury before committal to asylums. In Illinois the proposition is made to put all the State Asylums under the control of a State Board of three, to be elected by the people. Other schemes, in other states are brought forward, whose only effect will be to destroy the good of the present system, while they give only evil in return. No one would oppose a measure which should correct abuses, or throw any needed safe guard around the liberty of the individual. Most of these measures, however, have at the bottom, some political preferment, and are urged by those pseudo-philanthropists who know little of the subject, and have not the true interest of the insane at heart. They result in the multiplication of legal enactments, and place obstacles in the way of the speedy transfer, and admission of patients to the institution, prepared for their special use and care.

IOWA. *First Biennial Report of the Hospital for the Insane at Independence:* 1873. Dr. A. REYNOLDS.

Number admitted to Hospital, 136. Discharged recovered, 12. Improved, 3. Unimproved, 8. Total, 23. Remaining under treatment, 113.

This Institution was opened for patients on the first of May, 1873. It received a large number of the chronic class from the State Hospital at Mount Pleasant, and of those admitted directly from the counties, sixty-one per cent. had been insane for more than one year. The great requirement of the Hospital is more room. The present number, 113, is crowded into four wards, which have a capacity for only ninety, other wards will, however, soon be prepared, but the accommodations are all demanded by the present number of insane in the State.

KENTUCKY. *Report of the First Kentucky Lunatic Asylum:* 1873. Dr. GEO. SYNG BRYANT.

There were in the Asylum, at date of last report, 551 patients. Admitted since, 92. Total, 643. Discharged recovered, 25. Removed, 49. Died, 39. Eloped, 2. Total, 115. Remaining under treatment, 528.

The report of the managers is largely occupied with a statement of the defects of the new law of organization, and with suggestions for their remedy.

Serious difficulties are found to exist to making the distinction demanded by law in regard to the admission of acute cases only to the Hospital. There is an urgent necessity for an increase in the water supply, and for enlargement of the laundry, and extensive alterations and repairs in the buildings.

INDIANA. *Annual Report of the Indiana Hospital for the Insane:* 1873. Dr. ORPHEUS EVARTS.

There were in the Hospital, at date of last report, 468 patients. Admitted since, 320. Total, 788. Discharged recovered, 156. Improved, 44. Unimproved, 50. Died, 64. Total, 314. Remaining under treatment, 474.

The report is mostly a record of the progress made in repairing and improving the Hospital buildings. Some 64,000 dollars have been expended in this direction. Upon the completion of this design, Dr. Evarts maintains the State of Indiana will possess an Institution which will fully meet all the requirements of a model hospital for the treatment of the insane.

MISSOURI. *Report of the St. Vincents Institutian for the Insane:* 1869–1873. Dr. J. KEATING BAUDY.

This is a private Institution located in the City of St. Louis. It has received during the period covered by the report, 1,020 patients. It furnishes accommodations for inebriates as well as the insane, the former, however, must voluntarily place themselves under treatment. Extensive additions have recently been made, and there are now 213 patients in the Institution.

KENTUCKY. *Report of the Second Kentucky Lunatic Asylum:* 1873. Dr. JAMES RODMAN.

There were in the Asylum, at date of last report, 313 patients. Admitted since, 73. Total, 386. Discharged recovered, 29. Improved, 6. Unimproved, 4. Eloped, 2. Transferred to Fourth Asylum, 33. Died, 30. Total, 104. Remaining under treatment, 282.

OHIO. *Nineteenth Annual Report of the Northern Ohio Lunatic Asylum:* 1873. Dr. J. M. LEWIS.

There were in the Asylum, at date of last report, 178 patients. Admitted since, 237. Total, 415. Discharged recovered, 73. Improved, 47. Unimproved, 14. Died, 31. Total, 165. Remaining under treatment, 250.

The labor of rebuilding the Asylum was begun in May, 1873. "The two rear wings are up, roofed and inclosed; the heating apparatus is being put in, and in one wing it is nearly ready for use, and the inside work is being rapidly completed. The foundations for all the other sections of the buildings are in, and the stone work completed up to a level of the first floor beams." "We confidently expect, and believe that the wings already inclosed will be fully completed by the first day of April, 1874, and that the whole building will be completed for use by the first of January, 1875." During the year, the Institution has been seriously overcrowded in the effort to accommodate the greatest number of patients possible. Dr. Lewis presents for the acceptance of the board his resignation, as Superintendent, to take effect in April, 1874.

OHIO. *Thirty-fifth Annual Report of the Central Ohio Asylum for the Insane:* 1873. Dr. W. L. PECK.

This report gives the details of the work done upon the Asylum buildings now in process of construction:

The work now presents to view an elevation of the main central or administration building to the level of the second floor above the basement, the assembly hall building to the level of the third floor above the basement, and the four sections of the north wings partly to the same level, and the remainder to that of the second floor. Of the south wings, the first section is to the level of the third floor above the basement, and the second, third and fourth sections to the same level as those of the north wings. The rear central wing has advanced from the stone foundations, where the

work rested last year, to the completion of the whole elevation; and at the present writing the iron-work of the roof is being placed in position, and the slaters are on the ground preparing their work for completing the roof, if possible, before the cold weather sets in. The smoke-stack and ventilating tower is carried up to the height of 105 feet, leaving but 60 feet to be added for its completion.

To properly appreciate this show of progress it is necessary for a person to be on the ground, and take within his view the great extent of the work—over one mile of outer wall—and from personal observation make the comparison.

OHIO. *Nineteenth Annual Report of the Southern Ohio Lunatic Asylum:* 1873. Dr. H. C. RUTTER.

There were in the Asylum, at date of last report, 636 patients. Admitted since, 239. Total, 875. Discharged recovered, 157. Improved, 24. Unimproved, 37. Transferred, 30. Died, 67. Total, 315. Remaining under treatment, 560.

During the year the Institution suffered from an epidemic of small pox. The first case occurred in December, 1872, and the disease continued, despite all efforts to eradicate it, till May, 1873. In all 38 patients were attacked, of whom 12 died. But one case occurred among the men. The manner of its introduction to the Asylum, has not been satisfactorily accounted for. The disease first manifested itself in a woman who had been in the Asylum for three months, and during that time had never left the ward in which she was first placed. She had received no visitors, letters or articles of clothing, and no new patients had been placed in the ward. It may have been introduced by one of the attendants, who though protected may have exposed herself while on leave from the Asylum. This was the only way in which we could account for the epidemic, which visited the Asylum at Utica, two years ago. In

June last, Dr. S. J. F. Miller resigned his position of Superintendent, and Dr. H. C. Rutter was appointed temporarily to the place.

The board express regret that owing to the inadequate compensation, he feels himself obliged to relinguish his position in the Institution. Dr. J. L. McLean, assistant physician has also resigned for the same reason. This subject of compensation, has been commented upon in previous reports of the Asylum, and in the JOURNAL. It would seem that the State had pursued this "penny wise" system long enough, and that policy alone, setting aside justice, would induce it to pay its servants at least a moderate and respectable compensation for their services.

OHIO. *Fourteenth Annual Report of the Longview Asylum:* 1873. Dr. J. T. WEBB.

There were in the Asylum, at date of last report, 578 patients. Admitted since, 175. Total, 753. Discharged recovered, 78. Improved, 31. Unimproved, 21. Eloped, 1. Not insane, 6. Died, 49. Total, 186. Remaining under treatment, 565. Dr. Webb repeats the recommendation of last year, for the appointment of a special pathologist. He also recommends the erection upon the grounds of the Asylum, of a special hospital, for the treatment of epileptics. This subject is now attracting the attention of the specialty, and we trust the efforts now being made in this State and in Ohio, will result in the attainment of the object, for separate provision for this unfortunate class. The reasons for such a step as presented by Dr. Webb, will meet the approval of, and commend themselves to those interested in the care of the insane and epileptic classes.

MAINE. *Report of the Maine Insane Hospital:* 1873. Dr. H. M. HARLOW.

There were in the Hospital, at date of last report, 393 patients. Admitted since, 200. Total, 593. Discharged recovered, 83. Improved, 36. Unimproved, 20. Died, 43. Total, 182. Remaining under treatment, 411.

The affairs of the Institution are in a flourishing condition, $12,000 being carried to the new account of the year. A recommendation is made for the erection of another asylum. The doctor has given a short analysis of the causes which lead to insanity. His conclusion is, that worry and mental anxiety do more to undermine the health, and produce mental aberration, than intellectual labor and mental work, even when continued through the years of a long life. Nearly all who have asked for admission have been received. The recoveries for the year have averaged more than 40 per cent. on the admissions.

MASSACHUSETTS. *Forty-first Annual Report of the State Lunatic Hospital, at Worcester:* 1873. Dr. B. D. EASTMAN.

There were in the Asylum, at date of last report, 439 patients. Admitted since, 407. Total, 846. Discharged recovered, 98. Improved, 148. Unimproved, 62. Died, 69. Total, 377. Remaining under treatment, 469.

In June last an epidemic of small pox appeared in the Institution, the source of infection being entirely unknown. The cases were immediately moved to a vacant cottage, and the isolation was made so complete that the number of cases was limited to three, without any fatal result. The plans for the new hospital buildings are completed, and have received the approval and endorsement of the most experienced superintend-

ents of institutions for the insane. The work has been prosecuted with vigor, and nearly one-fourth of the foundations were laid before last fall.

MASSACHUSETTS. *Fifty-sixth Annual Report of the McLean Asylum for the Insane:* 1873. Dr. GEORGE F. JELLY.

There were in the Asylum, at date of last report, 164 patients. Admitted since, 92. Total, 256. Discharged recovered, 19. Improved, 45. Unimproved, 18. Died, 13. Total, 95. Remaining under treatment, 161.

RHODE ISLAND. *Report of the Butler Hospital for the Insane:* 1873. Dr. JOHN W. SAWYER.

There were in the Hospital, at date of last report, 134 patients. Admitted since, 94. Total, 228. Discharged recovered, 34. Improved, 39. Unimproved, 10. Died, 16. Total, 99. Remaining under treatment, 129.

The most noteworthy incident of the year, is the presentation to the institution by David Duncan, one of the trustees, since deceased, of $30,000, to be expended in the erection of a new ward, for the treatment of acute cases. The condition of the gift was, that an equal amount should be raised by subscription. A plan of the new ward is presented in the report. It contemplates the erection of a hospital ward, so arranged that it can be readily entered without passing through any of the wards or rooms of the Asylum buildings. By means of this munificent gift, the facilities for treatment, as also the accommodations will be materially increased. We would be pleased to record many other such deeds of charity and benevolence.

NEW YORK. *Fifth Annual Report of the Willard Asylum for the Insane:* 1873. Dr. JOHN B. CHAPIN.

There were in the Asylum, at date of last report, 672 patients. Admitted since, 169. Total, 841. Discharged recovered, 6. Improved, 8. Unimproved, 9. Died, 48. Total, 71. Remaining under treatment, 770.

In February last, a group of detached buildings was completed, and occupied by men patients. An appropriation is asked for the erection of a similar group for women patients. The cost of the new structures was $100,000, and they are made to accommodate 200 patients. This makes the apparent cost $500 per capita. In this estimate is not included the cost of land, or the main hospital buildings with all the necessary out buildings for the proper administration and conduct of the whole establishment. The cost per week, has been $3.09 per capita, with an addition of $15.00 per annum, for clothing. This, however, does not comprise the annual appropriation for officers salaries, extraordinary expenses, appropriations for farm, &c.

The Managers and Superintendent, express themselves as pleased with the plan for taking care of all the chronic insane of the State, and urge the preparation of sufficient accomodations to carry out the design. Although so many patients have been provided for, the great mass are still in the county asylums. Dr. Hoyt the secretary of the Board of State Charities, says:

"The number of insane at present in the county poor houses is nearly as large as in 1868, but they are in a much better condition."

This is attributed to the fact, that the more violent and disturbed cases have been removed to the Willard Asylum.

A request is made for appropriations to carry out this policy of caring for all the chronic insane of the

State, but Dr. Chapin distinctly says, "this number is large, and will increase more rapidly than we can possibly furnish the Asylum accommodation." From this showing, the problem is still far from a solution.

NEW YORK. *Second Annual Report of the New York City Asylum for the Insane:* 1873. DR. THEO. H. KELLOGG.

There were in the Asylum, at date of last report, 469 patients. Admitted since, 392. Total, 861. Discharged recovered, 116. Improved, 49. Unimproved, 30. Not insane, 3. Died, 104. Total, 302. Remaining under treatment, 559.

Although no epidemic has prevailed in the Asylum, the death rate is quite large, being twelve per cent. upon the whole number treated. This is accounted for by the character of the cases admitted. Twenty-four, or nearly one-fourth of the number, died within one month from the time of admission.

Among the remedial measures employed, Dr. Kellogg dwells at some length upon, and gives a very favorable report of, the use of the Turkish bath.

As this is the only Institution in this country, in which a trial has been made of this mode of treatment, we transcribe, at length, the Doctor's remarks:

During the year past there have been prescribed and administered to our patients two thousand two hundred and eighty Turkish baths. The effects of this treatment in the various stages and forms of insanity have been carefully noted, and they have been so highly favorable as to forcibly suggest the conclusion that the Turkish bath is a remedial agent of great efficacy and wide applicability in mental diseases.

The direct result of this treatment is to stimulate the functions of the skin, to strengthen and equalize the circulation, and to hasten secondary assimilation, as well as the retrograde metamorphosis of tissues. The first effect is often a slight loss of flesh, followed by an increased appetite and subsequent gain in weight. The patients seldom object to the bath, and many come to regard it as an actual luxury.

From our experience with this remedy in the different forms of insanity, we consider it especially applicable in the following class of cases:

In melancholia, with the skin dry, harsh, and of furfuraceous aspect, with capricious appetite, and general torpidity of the abdominal organs.

In primary dementia, where the capillary circulation is greatly impaired, the excretory functions of the skin suppressed, and the whole surface has a characteristic cyanotic appearance.

In alcoholic mania, with organic weakness of the liver or the kidneys, and tendency to anasarca.

In epileptic mania, where the physical disease is masked, and exacerbations of mental disturbance take the place of the convulsions.

In cases where there is restless excitement, with hyperesthesia of the skin, tactile illusions, and perverted sensation of the peripheral nerves.

In acute and chronic mania, as an effectual sedative to violent excitement, where narcotics are contra-indicated.

In a numerous class of cases where the manipulations of the bath afford an admirable passive exercise, which is a substitute for the more active exertion, which the patient is unwilling or unable to make either in-doors or in the open air.

In cases with organic disease of the brain, heart, or lungs, it is a valuable adjuvant in palliative treatment, but must be used very guardedly. The same caution is not required in cerebral congestion due to functional or circulatory derangement, where its use is followed by marked relief.

In conclusion it may be said that the Turkish bath is not more expensive than other appliances in the treatment of mental diseases, and it should be made one of the curative resources of every Hospital for the Insane.

---

## REPORTS AND PAMPHLETS RECEIVED.

*A plea for the Insane in the Prisons and Poor Houses of Pennsylvania:* by the Board of Public Charities. GEORGE L. HARRISON, Chairman, 1873.

*Addenda to a plea for the Insane in the Prisons and Poor Houses of Pennsylvania:* 1873.

*Memorial. Report of Committee of the Medical Society of the State of Pennsylvania in reference to the proper care of Insane Criminals.*

*Statement of the Trustees of the Pennsylvania State Lunatic Hospital in regard to certain changes of the Board of Public Charities of Pennsylvania with an appendix:* 1874.

*A circular letter to the Senate and House of Representatives of the Commonwealth of Pennsylvania:* by the Superintendents of the Asylums of the State.

We append a brief narration of the facts which led to this mutiplicity of pamphlets, and which has brought about a wordy conflict between the Board of State Charities and the various Insane Hospitals of the State. The question of the care of the criminal insane was under discussion. The Board of State Charities recommended the setting apart a portion of the new State Asylum, at Danville, for the reception of this class. The Superintendents opposed this measure, and recommended the establishment of a separate hospital in connection with one of the State Prisons, as has been urged in other States, and successfully adopted in the State of New York.

There would seem to be no irreconcilable difference in this seeming conflict of authorities. All agree in the first place that the criminal and convict insane should be properly cared for. The Superintendents of the several asylums and the State Medical Society, maintain that they should be cared for in institutions connected with the prisons. The Board of Charities, that a part of one of the ordinary asylums should be set apart for them. To those of experience there are great objections to the propositions of the Board, and in the State of Pennsylvania when the ordinary insane are so largely unprovided for, such a course would seem positively wrong.

In furtherance of this design, the Board of State Charities issued the "plea for the insane," soon followed by the "addenda" in which the State Hospital, at Harrisburg, was directly attacked. The charge was made that that Institution had not carried out the law of its organization, inasmuch as it received and retained a large proportion of the paying class of patients. The trustees of the Hospital sustained their action by showing the intent of the law to be, the care of the indigent as well as the pauper insane, and also that no recent cases of the pauper class had been refused admission, and further, that the public officers, as a matter of economy, had neglected to avail themselves of the use of the Hospital, and that as trustees they had not the power to compel the officers to send patients to the Asylum, and, therefore, that they had properly utilized the Institution.

The State Medical Society, through their committee, in the "memorial," urge the erection of a separate hospital for the convict and criminal insane, and in the circular letter, the Superintendents of the various Asylums urge upon the Legislature the adoption of the same plan. It is important to keep in view the general principles which should control the action of those having power in the premises. All are united in the belief that the highest duty of the State is to care for all the insane, and if this can not be done at once, the recent cases should have the preference.

This has apparently guided the action of those in charge of the asylums. That the Board of Charities have found in the prisons and county houses, cases of great suffering, whose inhuman treatment calls for sympathy and relief, is, no doubt, true. They have investigated these cases, and made themselves familiar with their histories and their necessities. We search

in vain, however, for any decisive action looking to the amelioration of their condition. Why are not the public officers made to perform their duty in sending the acute cases to the Asylum. There is no proof that they have ever been refused admission, or if the transfer is not advisable from the chronicity of the disease, why are they not made more comfortable where they are. If the Board have not the authority in this matter why should they not ask for it? They have the general supervision of the county houses, and should have the power to act wisely and humanely, to compel the county authorities to take better care of these unfortunates. Can they not enforce the simple rules of hygiene and decency, and insist upon their being kept clothed and clean, and being properly housed and fed. What is the object of a Board of State Charities? Perhaps only suggestive. It would seem that time and money spent in this direction would more than repay the outlay, and would be a better investment than that wasted upon a contest which has unfortunately degenerated into personalities.

*Transactions of the American Ophthalmological Society, Ninth Annual Meeting:* Newport, July, 1873.

*Ninth Annual Report of the Illinois Institution for the Education of Feeble Minded Children:* Jacksonville, 1873.

*Private Institution for the Education of Feeble Minded Youths:* Barre, Massachusetts, 1873.

*Thirteenth Annual Report of the Indiana Institution for Educating the Deaf and Dumb:* 1873.

*Third Annual Report of the St. Joseph's General Hospital:* Baltimore, 1873.

*Second Annual Report of the Roosevelt Hospital:* New York, 1873.

*Second Annual Report of the Dispensary of Skin Diseases:* Boston, 1873.

*Report of the United States Marine Hospital Service:* 1873.

This report is made by Dr. John M. Woodworth, Supervising Surgeon. Besides the statistical matter, it contains several special reports, one on Hospital Construction, with plates; on the epidemic of yellow fever of 1873; on urethral strictures; the sailor and the service in New York; and the river boatmen of the lower Mississippi.

*Annual Report of the Commissioners of Emigration of the State of New York:* 1873.

*Galvano-Therapeutics.* A revised reprint of a report made to the Illinois State Medical Society, 1873. DAVID PRINCE, M. D.

*An Inquiry Concerning Priority in the Ligation of the Internal Carotid Artery.* WILLIAM K. BOWLING, M. D., Nashville: 1874.

*Medical and Pharmaceutical Notes on the Preservation of Hypodermic Solutions; on Ergot and its Preparations; on Rhubarb; on Physician's Pocket Cases; on Buying Alcohol and Distilled Spirits; on a General Apparatus Stand, Upright Condenser, Pinchcock and Burette Stand:* EDWARD R. SQUIBB, M. D. Republished from the proceedings of the Pharmaceutical Association: 1873.

*The Application of Electricity to the Central Nervous System,* (*central galvanization*) by A. D. ROCKWELL, A. M., M. D.

*Report on some of the Recent Researches in Neuropathology:* by W. B. NEFTEL, M. D. (Reprinted from Archives of Scientific and Practical Medicine.)

*Clinical Notes on Nervous Diseases of Women:* W. B. NEFTEL, M. D. Reprinted from the Archives of Scientific and Practical Medicine.

*Changes of temperature and pulse in Yellow Fever:* Joseph Jones, M. D., of New Orleans. Reprinted from the American Practitioner, September, 1873.

*Legal responsibility in old age, based on researches into the relation of age to work:* George M. Beard, M. D.

*An Eye case in the Courts:* C. A. Robertson, A. M., M. D., Albany.

*Excision of the Thyroid Gland:* by Patrick Heron Watson, M. D., F. R. S., F. R. S. C. E. Edinburgh, 1873.

*A Lecture on the True Nature and Origin of the Salivary Globules and their identity with the white corpuscles of the blood:* Joseph G. Richardson, M. D., Philadelphia, 1873. Read before the Association of Dental Surgery.

*Origin and Propagation of Disease:* John C. Dalton, M. D. Delivered before the New York Academy of Medicine, November, 1873.

*Report on Compulsory Education:* by Dexter A. Hawkins, New York, 1874.

---

## BOOK NOTICES.

*A Dictionary of Medical Science, with accentuation and Etymology of the Terms and the French and other Synonyms.* By Robley Dunglison, M. D., LL. D. A new edition, enlarged and thoroughly revised by Richard J. Dunglison, M. D., Philadelphia: Henry C. Lea, 1874.

A Dunglison's dictionary is one of the first books every American student purchases for his library. If by good fortune he is able to possess other volumes of the same character, he is rarely satisfied in his search for words and their meaning, till he has consulted this authority; for such Prof. Dunglison always was, especially to those students who were graduated at Philadelphia, and who knew him personally, or by reputation.

By those who have used this work, the want of a revision has been felt for some years. The growth of medical nomenclature in all its departments has been rapid and constant, and many times we have turned away disappointed in the search for some word met with in the course of reading. It is now a source of pleasure to know that this want is fully met in the new edition. This includes more than *six thousand* new subjects and terms, not embraced in the last, and contains 160 pages of additional matter. In some of the English Medical Journals, we find the etymology and pronunciation of some terms freely criticised. Though we can not in all cases approve those given in this work, still allowance must be made for differences of opinion which may be fairly entertained. The definition of medical terms is to the mass of practitioners, the really practical and valuable part of the work, and in this respect, Dunglison's dictionary is not surpassed by any in the language.

*A Universal Formulary containing the methods of Preparing and Administering Officinal and other Medicines, adapted to Physicians and Pharmaceutists.* By R. Eglesfield Griffith, M. D. Third edition, carefully revised and much enlarged. By John M. Maisch, Phar. D., Professor of *Materia Medica* and Botany in the Philadelphia College of Pharmacy, with illustrations, Philadelphia: Henry C. Lea, 1874.

This work is a compendious collection of *formulæ*, and of pharmaceutic processes, and is adapted especially to the needs of physicians and apothecaries. The remedies are arranged in alphabetical order, and a short history giving the sensible properties and medicinal uses of each, precedes the *formulæ*. These are numerous, and include one or more combinations of every form, both solid and liquid, in which the drug may be used. The proportions are fully written out, as the

author believes all prescriptions should be, to avoid the possibility of error. Directions are given for the pharmaceutical processes demanded for all the preparations of the pharmacopœia. This is followed by a list of all the poisons with their antidotes. The incompatibilities arising in the combinations between different drugs are carefully pointed out. The work is supplied with indices of diseases and their remedies, of pharmaceutical and botanical names, and a complete general index. It is replete with information, and forms a most valuable addition to the Dispensatory.

*A Manual of Psychological Medicine, containing the Lunacy Laws, the Nosology, Ætiology, Statistics, Description. Diagnosis, Pathology and Treatment of Insanity, with an appendix of Cases.* By JOHN CHARLES BUCKNILL, M. D., London, F. R. S., F. R. C. P., Lord Chancellors Visitor of Lunatics, and DANIEL HACK TUKE, M. D., Member of the Royal College of Physicians, of London; Foreign Associate of the Medico-Psychological Society of Paris; formerly Lecturer on Psychological Medicine, at the York School of Medicine, and Visiting Medical Officer of the York Retreat. Third Edition, Revised, Illustrated, and much enlarged, Philadelphia: LINDSAY & BLAKISTON, 1874.

The Manual of Psychological Medicine, was first presented to the profession in 1858, as a systematic treatise upon insanity. Since that time, other works of merit have appeared and been received with favor. Griesinger in Germany, and Blandford in England, have done much to advance medical science, in the department of psychology. It has been a period of great activity, of careful research, and scientific investigation. The Associations of those engaged in the specialty, and the publication of journals devoted to the subject, have done much toward collecting and arranging facts, deducing conclusions, and establishing psychology upon the only correct basis, that of physiology and pathology. In this period, more has been done than ever before, in

the same length of time, to prove the dependence of insanity upon morbid physical conditions. The aid of the microscope and chemistry has been invoked, and the crude and imperfect methods of investigation, which were once considered satisfactory, have been discarded. The authors state in their preface, that the active development of psychological medicine during recent years, has compelled them to amplify their work. The great principle that mental disease depends solely upon cerebral conditions, which was systematically taught in these pages fifteen years ago, has now become so thoroughly established, that it is no longer questioned. Its full recognition, however, has been followed by such activity of observation and research, that the field of inquiry has been extended in every direction, and at the present time it may be truly said, that new opinions, new forms of insanity, and new remedies, have been, and are being multiplied, at a rate which far outstrips the steady march of consolidated knowledge * * * * Practically, however, psychological medicine has to teach what is known of mental disease, and how to deal with it, and to these the authors have endeavored to restrict themselves. Dr. J. Batty Tuke is the author of the histological portion of the chapter on pathology, and the authorship of the volume is divided as before between Drs. Bucknill and Daniel H. Tuke.

The work has been so long before the public, and has attained such a position in the opinion of the profession, that we shall not attempt an extended review, but shall speak of some of the changes and additions.

The difficulty in the way of making a proper and comprehensive definition of insanity, the author states, is found in the attempt to combine the two objects, viz: the medical and the forensic. And further adds, that

it is impossible to include both of these ideas in one definition, without narrowing it too much for medical use, or making it too comprehensive for the just demands of the law.

The real defect in many of the definitions presented, is found in the non-recognition of the physical origin of the disease, by reason of which it is made to include all the normal eccentricities and peculiarities of the individual; and in the second place, in encumbering it with metaphysical distinctions, regarding the various mental faculties, of understanding, will, &c. In either case the result to the witness is equally disastrous. He either deprives himself of the power to make a true differentiation, by the only safe guide, that of disease, or is put in inextricable confusion, by his efforts to disentangle the web which his metaphysical theories have thrown around him. The author says, "whatever definition of insanity is adopted by the student, it is all important that he should regard bodily *disease*, including *defect*, as an essential condition."

This is good and safe advice, and if fully adopted would save the medical profession from much of the opprobrium which arises from the diversity of opinions among doctors, in trials involving the question of insanity.

The sections on ætiology, and statistics, show much labor and research; the opinions and experience of a large number of both English and American and foreign writers have been collated, and are given at length, in elucidation of the subjects. The statistics of various institutions have been largely utilized, and the conclusions have thus been formed from a large mass of evidence. A large portion of the matter referrible to these subjects has been given from the old edition of the Manual. The results arrived at are in the main those generally accepted by the specialty.

The chapter on the various forms of insanity, contains much of the subject matter of the previous editions. It is, however, introduced by some preliminary remarks regarding the necessity of studying the physiology of the nervous system, psychology, and the disorders of the nervous system generally. Among the forms we see repeated, those of delusional insanity, of moral, of emotional, homicidal, suicidal, "*et id omne genus.*" We are sorry that the sanction of such authority should be given to the multiplication of manias, and forms of insanity, which answer no good purpose, but only serve to complicate the subject, and to give importance to, and elevate into a class, simply accidental circumstances, or minor differences arising in the course of an attack of insanity. The old term monomania has been as far as possible discarded, and the wish is expressed that it had never been introduced into psychological nosology.

The arrangement of matter is such as to give more coherence and clearness of statement than before. New cases have been introduced, the ætiology and prognosis is given in connection with each form, and the whole is made more attractive in appearance, and of easier reference by the use of more displayed type. Sphygmographic tracings, and specimens of hand-writing, characteristic of different conditions in insanity are annexed to the chapter.

Chapter four, gives a brief sketch of the various forms of insanity from a somato-ætiological point of view. This is entirely new matter, and gives the authors idea of classification. It resembles that originated by Skae in deriving the form of insanity wherever it is practicable from the ascertained physical cause. It recognizes direct psychical causes, and to that extent lacks in unity. It is easily comprehensible, and

more complete in its detail than most of those presented. We do not, however, believe it will command such assent from the profession as will lead to its adoption. Such a system of classification has yet to be formed, and is certainly much to be desired.

Chapter five, on the diagnosis of insanity, is a reprint from former editions, save the one section on the diagnosis of recovery, which hitherto has attracted little attention from authors. The character of the disease, and the consequences attached to the decision, involving as it does the discharge of a patient from an asylum, and the resumption of business duties, often of great magnitude, or in cases of persons who have been dangerous while insane, the safety and peace of community make this an important subject. The symptoms enumerated on which the diagnosis of recovery are to be based, refer only to the mental condition of the individual and his power of self control. The physical appearance of the patient is not mentioned.

This is often the question of paramount importance. As the authors have made the cerebral condition the factor upon which mental disease depends, it is a matter of surprise that they make no note of the physical state among the signs of recovery. It often, yes usually happens that the mental aberration disappears, that the patient becomes quiet, well behaved, and rational in conversation before there is a complete re-establishment of health. This is the most critical period in the history of the case. It is the time when from any indiscretion or excess of physical or mental exertion, a relapse may readily occur. There is great instability of both nerve and muscular element. Strength is not attained. In the progress of convalescence, generally with the cessation of the stage of excitement, whether in cases of melancholia or

mania, there usually comes a condition of physical and mental repose. This state has its well marked symptoms. There is sluggish action in the peripheral circulation. The capillaries of the skin, especially of the hands and lips are dilated from vaso motor defect, giving the appearance of a congested condition. The skin is colder than normal. In many cases there is an unnatural fullness, puffiness, and color of the face, which the friends of the patient will often notice. In speaking of their condition, the remark is frequently made. "The patient seems well, but is that good flesh, isn't it bloat." The facial lines are not clearly or distinctly marked, and are often quite obliterated, and the whole aspect of the patient is that of physical inaction and want of vigor. Experience shows that it is not safe to pronounce the recovery assured, till after this condition has passed away.

Chapter six, is enriched by the addition of the section on morbid histology, which was prepared by Dr. J. Batty Tuke, who is known as a most successful investigator and observer. "The purpose is to describe as shortly and succinctly as possible, the various histological abnormalities which have been observed in the brains of persons who have died insane," and, "it may be broadly stated that morbid changes can be found in every insane brain, if the investigation is thoroughly worked out." An illustration is given of a microscopical section of a healthy brain, and several plates represent the pathological specimens. The subject is treated substantially as in the articles of Dr. Tuke, in the *Medico-Chirurgical Review*, for April, July and October, 1873. The lesions, which have been observed, are considered according as they affect the membrane, the epithelium, the blood vessels, the neuroglia, the cells, the nerve fibre, the spinal cord, the sympathetic ganglia of the

neck. The field is a comparatively new one, especially for English observers. Dr. Lockhart Clarke is the predecessor of Dr. Tuke whose labors are mainly known to the profession. In this country, the investigations made at the Utica Asylum, are the most extensive.

Dr. Tuke does not attempt to localize lesions, but observes that the convolutions of the vertex, and these immediately bounding the longitudinal fissure are the chief seats of disease; that in searching for cerebral lesions we may be guided to a very great extent by the naked-eye appearances presented by the arachnoid and pia mater; when these membranes are seen thickened or clouded, the subjacent cerebral substance is invariably diseased; these conditions are in ninety-nine cases out of a hundred, confined to the superior convolutions. Thus far most of the observations have been made in cases of chronic insanity, and have tended to prove the fact that lesions do occur. In the future, attention must be directed to detecting the changes in their early stages, and to localizing them. We consider the one article on histology, as the most important in the work, looking to the true scientific progress and advancement of psychology. This dealing with appreciably diseased states, will do more to remove the subject from the field of metaphysical speculation, than all the theories that could be presented.

The concluding chapter on the treatment of insanity, is full and gives in detail all the remedial and moral measures ordinarily employed. The new remedies with which the pharmacopœia has been enriched, and the recent applications of well known drugs, receive due attention. The hypodermic injection of morphia, chloral, bromide of potassium, ergot of rye, the calabar bean, conium, electricity and the turkish bath, are added to the list of the former editions. In estimating their

value, and in the recommendations for their use, the experience and observations of the best authorities, and of those who have made special investigations of their qualities and powers have been quoted. The whole subject of treatment has been brought down to the present time, and furnishes the practitioner the most complete *armamentarium*, which can be found outside of the current literature of the medical journals.

The work as now offered, can hardly claim the title of a Manual of Psychological Medicine, as it is rather a text book upon the subject, and will be consulted as such.

The chapters on "Forms of Insanity," and "Diagnosis of Insanity," might well have been combined. Practically the two, as here treated, form one subject. The publishers have done their work well, the type is good and clear, and the impressions and coloring of the plates representing microscopic sections of brain tissue are rarely equaled. We can heartily commend the work. It is full, comprehensive, and in the main we can endorse its statements.

*A Manual of Midwifery, including the Pathology of Pregnancy and the Puerperal State.* Dr. KARL SCHROEDER. Translated from the Third German Edition, by CHARLES H. CARTER, M. D., B. S. London. D. APPLETON & Co., N. Y.: 1873.

The Manual is well adapted to meet the wants of the student and of the practitioner, as it is concise and practical. Although many subjects are briefly treated, still the general principles are fully stated.

In the chapter on the Physiology of Pregnancy, the author gives his views of the causes productive of menstruation; as these are peculiar and original, we give the substance of his remarks: The growth of the ripening Graafian follicle causes pressure on the ter-

minal extremities of nerves, imbedded in the ovarian stroma. The sum of the reflex irritation thus caused, gives periodical congestions, with the escape of an ovum into the peritoneal cavity, and hæmorrhage from the mucous membrane lining the cavity of the body of the uterus. On the management of labor, contrary to the views and teachings of many, he recommends, to avoid laceration of the perineun, support with the hand, and the directing of the fœtal head toward the symphysis pubis until the occiput passes. This accords with the view and practice of some of our American instructors and accoucheurs. The Pathology of Pregnancy embraces a description of the conditions existing in the mother, which are productive of abortion, and of the diseases of the ovum. This chapter presents nothing new in the way of treatment, but shows the results of close observation and scientific investigation.

In the Pathology of Parturition, opium and its preparations, are recommended as a most efficient remedy, when the pains are feeble at the commencement of labor, and especially when they are accompanied with nervous excitement. Still more might have been said in commendation of this practice, which in the large hospitals of this country, has been adopted with the most gratifying results. In "*prolapsus funis*," although the knee-elbow position is advised to be used, no reference is made to our distinguished countryman, who first described this method of treatment. If the theory regarding puerperal fever prove correct, a great advance will have been made, in our knowledge of causation and of the proper treatment of this disease. He says, it is a septicæmia, and is produced oftenest from inoculation from without, if, however, from within, it occurs sooner after delivery. In the latter case, it is more

likely to take place, when the fœtus is dead and partially decomposed, or when from pressure, gangrene is induced, and lastly when there is carcinoma. As autoinoculation is far less common than infection from without, therefore prophylaxis is of the utmost importance, and to this end nurses ought not to be allowed to take charge of new cases, while attending a fever patient. In treatment, he reduces the temperature by cold baths and employs purgatives to eliminate the blood poison.

The treatment by purgatives and the use of mercury, to produce salivation in this disease, will not be adopted by the profession, or even favorably received.

The Doctor inclines to the theory that the puerperal convulsions are due, not to uræmia, as is generally believed, but to œdæma of the brain from the hydræmic condition of the mother. His treatment, however, does not differ essentially from that recommended by those who differ from him as regards causation, and consists mostly in the administration of morphia. We can not speak at greater length of the views of the author, or of the opinions he entertains diverse from those generally adopted.

Prof. Schroeder has had such an experience, and acquired such a reputation, that his utterances are to be received with the highest respect. He is a candid writer, and his book contains many practical things, which have not been mentioned by other authors. Any one interested in the subject can not fail to be benefited by the perusal of the work before us.

minal extremities of nerves, imbedded in the ovarian stroma. The sum of the reflex irritation thus caused, gives periodical congestions, with the escape of an ovum into the peritoneal cavity, and hæmorrhage from the mucous membrane lining the cavity of the body of the uterus. On the management of labor, contrary to the views and teachings of many, he recommends, to avoid laceration of the perineum, support with the hand, and the directing of the fœtal head toward the symphysis pubis until the occiput passes. This accords with the view and practice of some of our American instructors and accoucheurs. The Pathology of Pregnancy embraces a description of the conditions existing in the mother, which are productive of abortion, and of the diseases of the ovum. This chapter presents nothing new in the way of treatment, but shows the results of close observation and scientific investigation.

In the Pathology of Parturition, opium and its preparations, are recommended as a most efficient remedy, when the pains are feeble at the commencement of labor, and especially when they are accompanied with nervous excitement. Still more might have been said in commendation of this practice, which in the large hospitals of this country, has been adopted with the most gratifying results. In "*prolapsus funis*," although the knee-elbow position is advised to be used, no reference is made to our distinguished countryman, who first described this method of treatment. If the theory regarding puerperal fever prove correct, a great advance will have been made, in our knowledge of causation and of the proper treatment of this disease. He says, it is a septicæmia, and is produced oftenest from inoculation from without, if, however, from within, it occurs sooner after delivery. In the latter case, it is more

likely to take place, when the fœtus is dead and partially decomposed, or when from pressure, gangrene is induced, and lastly when there is carcinoma. As autoinoculation is far less common than infection from without, therefore prophylaxis is of the utmost importance, and to this end nurses ought not to be allowed to take charge of new cases, while attending a fever patient. In treatment, he reduces the temperature by cold baths and employs purgatives to eliminate the blood poison.

The treatment by purgatives and the use of mercury, to produce salivation in this disease, will not be adopted by the profession, or even favorably received.

The Doctor inclines to the theory that the puerperal convulsions are due, not to uræmia, as is generally believed, but to œdæma of the brain from the hydræmic condition of the mother. His treatment, however, does not differ essentially from that recommended by those who differ from him as regards causation, and consists mostly in the administration of morphia. We can not speak at greater length of the views of the author, or of the opinions he entertains diverse from those generally adopted.

Prof. Schroeder has had such an experience, and acquired such a reputation, that his utterances are to be received with the highest respect. He is a candid writer, and his book contains many practical things, which have not been mentioned by other authors. Any one interested in the subject can not fail to be benefited by the perusal of the work before us.

## CORRESPONDENCE.

### CLINICAL OBSERVATIONS ON THE DEMENTIA AND THE HEMIPLEGIA OF SYPHILIS.

*To the Editor of the American Journal of Insanity:*

In the January, 1874, issue of your valuable JOURNAL, you did me the honor of republishing, *in extenso*, an article which I contributed to the pages of *The American Journal of Syphilography and Dermatology*, in January, 1872. I recorded the two cases in that article because they illustrated what I regard as typical forms of syphilitic brain disease. My purpose in this correspondence, is merely to call the attention of your readers to the present condition of the first patient whom I have had opportunities of seeing during the past three years. He has remained perfectly well and in good condition, mentally and physically up to this time. I saw him a few days ago, and he was literally in perfect health. While the use of the large doses of the iodide of potassium administered in this case during a period of many weeks illustrates, beyond question, the specific value of the drug in this form of disease, the perfect condition of the patient at this time, (after a period of more than three years,) also illustrates the immunity from any other complications following its use in such large quantities. It has been suggested that it might, if given to the extent named, induce congestion, and subsequently organic disease of the kidneys. This case, I think, affords at least one instance of proof against any such theory. From clinical observations on a number of cases that have been under my care since the cases alluded to were reported, I have had many additional opportunities of verifying the opinions I then entertained and expressed, regarding the quantity of the iodide of potassum necessary to induce the absorption of gummy deposits in old and inveterate cases.

M. H. HENRY, M. D.

159 West 34th Street, New York, March 20, 1874.

# SUMMARY.

## NOTICES.

Dr. H. P. Stearns, a practicing physician of Hartford, Connecticut, has been appointed Superintendent of the Retreat, in place of Dr. James H. Denney, resigned.

—Dr. Daniel H. Kitchen, Assistant Physician of the New York State Lunatic Asylum, at Utica, has been appointed Superintendent of the State Emigrant Hospital for Insane, on Ward's Island, New York Harbor. He entered upon the duties of his office in Februay last.

—Dr. J. Welch Jones, has been elected Superintendent of the Louisiana State Lunatic Asylum, for the ensuing two years, vice Dr. L. A. Burgess.

—Dr. J. M. Lewis, resigned the position of Superintendent of the Northern Ohio Lunatic Asylum, in November last, to take effect the first of the present month. The trustees passed resolutions expressing their kindly feeling and good wishes.

—Dr. S. J. F. Miller, resigned the Superintendency of the Southern Ohio Lunatic Asylum, in June last. Dr. H. C. Rutter has since discharged the duties of the position. He has offered his resignation to take effect when his successor shall have been appointed.

—Dr. D. R. Wallace, has been appointed Superintendent of the Texas Hospital for Insane, vice, Dr. G. F. Weisselberg.

—The Board of Trustees of the Central Ohio Lunatic Asylum, has been superseded by a Board of Commissioners. At their last meeting, on the 17th of March, they passed resolutions expressing their confidence in Dr. William L. Peck, and approval of his management, both as a Medical Superintendent, and more recently Superintendent of Construction. We trust the Doctor will be continued in his former position by the new Board.

—Dr. James H. McBride, recently of the Staff of Charity Hospital, of New York, has been appointed Assistant Physician of the Northern Hospital for the Insane, at Oshkosh, Wisconsin.

—By recent action of the St Louis County Court, the office of Superintendent of the County Insane Asylum is abolished. This removes Dr. William B. Hazdar and the care of the Institution devolves upon an assistant physician. Dr. J. K. Bauduy, of St. Vincent's Asylum, is employed to visit the County Asylum, *two or three times a week.* The reason given for the change, is placed on the ground of economy.

The remarks of the *St. Louis Medical and Surgical Journal*, from which we gain the above information, would, in view of this statement of the facts, seem proper and judicious. The action and the motives which gave rise to it are severely condemned.

—The State Homœopathic Asylum for the Insane, located at Middletown, Orange County, New York, will be opened for the reception of patients, on the 20th inst. The center building is completed. It is four stories in height, and besides being adapted for the residence of the officers, and general administrative purposes, accommodates about eighty women patients. One wing,

which it is hoped, will be completed in the fall, is intended to receive men patients. Dr. H. R. Stiles is the Superintendent, and Dr. Wm. Morris Butler, Assistant Physician.

Hæmatoma Auris.—Dr. Brown-Séquard, in a recent lecture at the Lowell Institute, in speaking of the consequence of irritation to nerves, says:

It is well known that insane patients, especially those having a peculiar inflammation of the gray matter of the brain and the *medulla oblongata*, and those attacked with what is known as general paralysis of the insane, have a slight effusion of blood in the ear and sometimes gangrene. It used to be thought that the nurses, who are unfortunately often very violent to insane patients, had been abusing them. But it is certain, also, that the trouble is frequently due to an inflammation. For there is no reason why nurses should always and especially strike them on the ear. Again, they may have had trouble in that organ when attacked; and thirdly, I have actually found that an injury of a certain part of the base of the brain produces almost invariably a hæmorrhage of the ear and gangrene after it. It occurs in several species of animals, especially in Guinea pigs. So that there is no doubt whatever in my mind that the affection of the ear in insane patients is produced by a morbid irritation of the nervous system. Great changes may also occur in the hair, in the nails, and even the color of the iris may be changed from the same cause. The nails cease to grow, as Dr. Mitchell of Philadelphia has shown, in many cases by disease of the brain. They become altered in shape, and show a series of lines, depressions, and protrusions, or ridges and canals. So that a morbid influence takes place on those parts which are only secreted from the blood. The hair may change color from one day to another under a morbid influence. It may be changed not only in color but in density and thickness, and become dry or oily. There is a morbid alteration of the skin and the cellular tissue, which is not rarely observed in cases of disease of the brain or spinal cord. It is the sloughing of a part due to injury of the nervous system. It was perfectly well known that such sloughing might appear after an injury to the nervous system, yet people often called these appearances "bed sores." But we know that pressure in people who have not an irritation of the nervous system will not produce bed sores. In cases of fracture of the

limbs, for instance, the patient lying in the position to have a pressure of the nates will not have these sores. But on the other hand—and these had led me to the view I propounded long ago, and which is now being accepted—in animals, in dogs, for instance, when lesion is produced, which causes an inflammation of the spinal cord and an inflammation of the nerves arising from it, we find a sloughing coming from a part of the sacrum, which is just the same as in man. In dogs, instead of lying down as we do on the back, the lying down is on the front part of the belly and on the thigh, while the sloughing, nevertheless, appears just where it does in man, on the nates. Therefore, it can not be construed as being caused by pressure. Besides, I have seen a sloughing appear within three days after an injury, so that even if we imagined that the poor creature had turned and pressed on the part for a time, yet the length of time would not be sufficient to produce the trouble there. Neither is the explanation that the sloughing is due to decomposed water from the patient a satisfactory one. Undoubtedly this is a powerful cause of increase of the sloughing, but not the original cause, as in those animals I refer to there was not a drop of that water irritating the back.

Revolt of Lunatics.—A revolt occurred a few days ago in the Lunatic Asylum of St. Andrew's near St. Petersburg. While the keepers were at dinner the patients burst into a room where some arms were stored, and, having distributed them, prepared for resistance. The wardens endeavored to calm them by argument, but ineffectually, and some of the keepers, having approached too near, were seized and attacked with sword-cuts. Five were killed and two seriously wounded. Recourse was then had to famine; but forty-eight hours' fast was endured before the madmen laid down their arms. Six of the most furious have been placed in separate cells, with strait waistcoats on them.—*Med. Times.*

Obituary.—Dr. Forbes Winslow, died, March 3d, 1874, in the 64th year of his age. He had long suffered from disease of the kidneys, though his final sick-

ness was of short duration. He was born in London, in 1810, and commenced his professional studies in New York. He continued these, after his return to London, and in 1835, became a member of the Royal College of Surgeons. In 1849, he was graduated from the Aberdeen University. He became a Fellow of the Royal College of Physicians, of Edinburgh, in 1850, and in 1859, of the London College, and in the same year, obtained the honorary degree of D. C. L. Oxon. He also held the position of President of the Medical Society of London. Dr. Winslow devoted himself to the study and practice of psychological medicine, and by continued and persistent labor in this field attained to the position of an authority upon the subject. He was best known to the profession, by the articles contributed to the Journals, and by his separate works. The following is as full an account of his literary labors as we can at present give. In 1837, he delivered the "Lettsomian Lectures on Insanity," which at that time were printed in the *Lancet*, and in 1854, collected in one volume. The same year he also published, "Physic and Physicians." In 1840, his "Anatomy on Suicide" appeared, and in 1842, "The Preservation of the Health of the Body and Mind." He also wrote "On the Plea of Insanity in Criminal Cases," and in 1843, on the "Incubation of Insanity." In 1860, appeared the work by which to the general practitioner and the public, he is best known, "Obscure Diseases of the Mind and Brain." This has passed through four editions. His next work was on "Light," as influencing life and health. In 1848, he began the publication of a *Quarterly Journal of Psychological Medicine*, which he conducted for sixteen years. This was the first Journal of its kind in England, and was succeeded by the "*Medical Critic*," which

limbs, for instance, the patient lying in the position to have a pressure of the nates will not have these sores. But on the other hand—and these had led me to the view I propounded long ago, and which is now being accepted—in animals, in dogs, for instance, when lesion is produced, which causes an inflammation of the spinal cord and an inflammation of the nerves arising from it, we find a sloughing coming from a part of the sacrum, which is just the same as in man. In dogs, instead of lying down as we do on the back, the lying down is on the front part of the belly and on the thigh, while the sloughing, nevertheless, appears just where it does in man, on the nates. Therefore, it can not be construed as being caused by pressure. Besides, I have seen a sloughing appear within three days after an injury, so that even if we imagined that the poor creature had turned and pressed on the part for a time, yet the length of time would not be sufficient to produce the trouble there. Neither is the explanation that the sloughing is due to decomposed water from the patient a satisfactory one. Undoubtedly this is a powerful cause of increase of the sloughing, but not the original cause, as in those animals I refer to there was not a drop of that water irritating the back.

Revolt of Lunatics.—A revolt occurred a few days ago in the Lunatic Asylum of St. Andrew's near St. Petersburg. While the keepers were at dinner the patients burst into a room where some arms were stored, and, having distributed them, prepared for resistance. The wardens endeavored to calm them by argument, but ineffectually, and some of the keepers, having approached too near, were seized and attacked with sword-cuts. Five were killed and two seriously wounded. Recourse was then had to famine; but forty-eight hours' fast was endured before the madmen laid down their arms. Six of the most furious have been placed in separate cells, with strait waistcoats on them.—*Med. Times.*

Obituary.—Dr. Forbes Winslow, died, March 3d, 1874, in the 64th year of his age. He had long suffered from disease of the kidneys, though his final sick-

ness was of short duration. He was born in London, in 1810, and commenced his professional studies in New York. He continued these, after his return to London, and in 1835, became a member of the Royal College of Surgeons. In 1849, he was graduated from the Aberdeen University. He became a Fellow of the Royal College of Physicians, of Edinburgh, in 1850, and in 1859, of the London College, and in the same year, obtained the honorary degree of D. C. L. Oxon. He also held the position of President of the Medical Society of London. Dr. Winslow devoted himself to the study and practice of psychological medicine, and by continued and persistent labor in this field attained to the position of an authority upon the subject. He was best known to the profession, by the articles contributed to the Journals, and by his separate works. The following is as full an account of his literary labors as we can at present give. In 1837, he delivered the "Lettsomian Lectures on Insanity," which at that time were printed in the *Lancet*, and in 1854, collected in one volume. The same year he also published, "Physic and Physicians." In 1840, his "Anatomy on Suicide" appeared, and in 1842, "The Preservation of the Health of the Body and Mind." He also wrote "On the Plea of Insanity in Criminal Cases," and in 1843, on the "Incubation of Insanity." In 1860, appeared the work by which to the general practitioner and the public, he is best known, "Obscure Diseases of the Mind and Brain." This has passed through four editions. His next work was on "Light," as influencing life and health. In 1848, he began the publication of a *Quarterly Journal of Psychological Medicine*, which he conducted for sixteen years. This was the first Journal of its kind in England, and was succeeded by the "*Medical Critic*," which

he also edited for a time. He established the Sussex House at Hammersmith, a private asylum for the insane, and for many years gave that Institution his personal supervision. He had a large practice in diseases of the nervous system, both general, and consulting, and was frequently called as an expert in criminal cases. He gave evidence in several medico-legal cases which have since become celebrated in medical jurisprudence. In the various works of his life Dr. Winslow left a record valuable to humanity and to medical science.

—The Twenty-Eighth Annual Meeting of the Association of Medical Superintendents of American Institutions for the Insane will be held at the "Maxwell House," in the city of Nashville, Tennessee, at 10 o'clock, A. M., of Tuesday, May 19th, 1874.

Resolved, That the Secretary, when giving notice of the time and place of the next meeting, be requested to urge on members the importance of prompt attention at the organization, and of remaining with the Association till the close of its sessions.

By standing resolution, the Trustees of the several Institutions are invited to attend the meetings of the Association.

JOHN CURWEN,

Harrisburg, March 4, 1874. *Secretary.*